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RANDY LENGYEL built a 250-MIPS virtual Linux server at his company.

DAVID ORNDORF

MAINFRAME LINUX: STOPPING SERVER SPRAWL

Greater reliability. Improved performance. Faster resource provisioning. Running Linux on the mainframe may be your best bet for consolidating servers and lowering costs. Yet not every application will benefit — and knowing the difference is a crucial measure of success. See what experienced users recommend. **PAGE 23**

NEWSPAPER

Microsoft Adds a Year to NT Server 4.0 Support

Users feeling upgrade pressure get a reprieve, but extension doesn't cover all support options

BY CAROL SLIWA

Microsoft Corp.'s confirmation last week that it will extend key support provisions for Windows NT Server 4.0 through 2004 provided a reprieve for companies feeling pressure to move off the aging operating system.

Many corporate users that are still running Windows NT Server 4.0 said the end of support was the primary reason

for their decisions to either migrate off the operating system or plot their upgrade options. Microsoft had announced in October that the extended support phase for NT Server 4.0 would cease at the end of 2003.

"This gives me more breathing room. Like all IS organizations, we're just massively resource-constrained," said Randy Truax, manager of

technical services at Metropolitan Health Corp. in Grand Rapids, Mich.

Metropolitan has 54 Windows NT 4.0 servers running health care, financial and supply chain applications, as well as SQL Server and various utility tools. Plans call for the IT department to determine the fate of those servers by the time the organization's new fiscal year starts July 1.

Truax said he's now more inclined to take a closer look at Windows Server 2003,

NT Server 4.0, page 49

Unprepared Firms Slammed

Worm took advantage of IT shops' failure to use available patches

BY JAIKUMAR VIJAYAN

The widespread disruptions caused by last week's SQL Slammer worm demonstrated yet again the importance of proactive vulnerability patch management, users and analysts said.

Slammer, a self-propagating worm also dubbed Sapphire and SQL Hell, surfaced Jan. 25. The worm infected computers by means of a known flaw in Microsoft Corp.'s frequently patched SQL Server database software. Slammer works by copying itself onto vulnerable computers and then using those systems to scan for and

infect other machines running SQL Server.

As was the case with predecessor worms like Nimda and Code Red, Slammer could have been thwarted if users had applied a patch that Microsoft issued more than six months ago.

The administrators of affected servers "most certainly *Slammer, page 14*

Key Lessons

Slammer's vast propagation highlighted the need to:

- **Make certain** that any application being exposed to the Internet is maintained at the latest patch level.
- **Perform** periodic vulnerability scans.
- **Block** all ports except those that are absolutely essential.
- **Institute** formal processes for patch management and remediation.

Cheap Cartridge Option in Peril

Lexmark's legal action could dry up printer cartridge aftermarket

BY PATRICK THIBODEAU
WASHINGTON

The remanufactured toner cartridge industry, which provides low-cost printer cartridges for many corporations, is under a legal and technological assault that could deprive

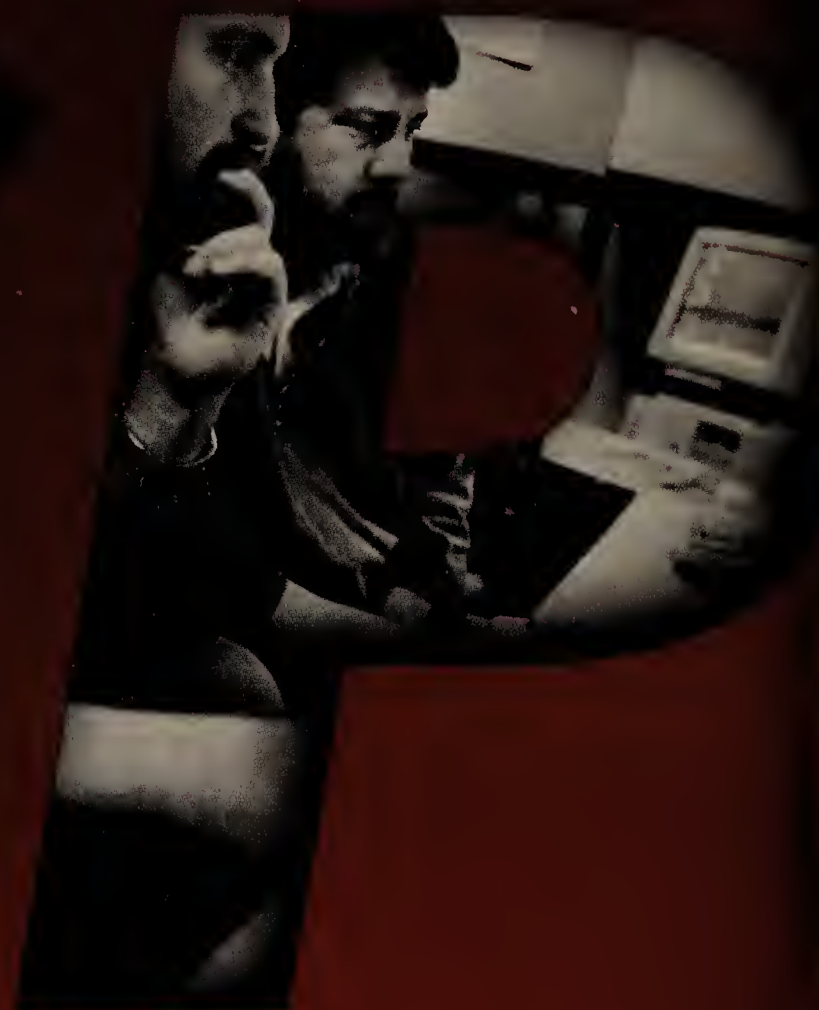
IT managers of a money-saving option.

The major printer manufacturers are making changes to cartridge designs and the computer chips that mate a cartridge with a printer, thereby making it increasingly difficult for remanufacturers to refill the cartridges. It can take remanufacturers more than a year of engineering work to

Cartridges, page 16

INSIDE: ANOTHER FIX

Use of a free benchmarking tool made available six months ago would have slammed the door on Slammer. **Page 14**



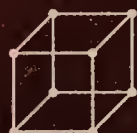
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CONTENTS

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When Yanking the Mainframe Isn't an Option

In the Management section: Judith Franklin (left) turned the legacy system at Minnesota's DMV into a Web-enabled application that's lauded for its convenience and low makeover price. **Page 35**



Inside Trustworthy Computing

In the Technology section: How is Microsoft doing with its Trustworthy Computing initiative? Craig Mundie, the company's senior vice president and chief technical officer of advanced strategies and policy, gives *Computerworld* an update. **Page 28**

NEWS

- 6 The SEC is probing** i2's finances for 2000 and 2001, as the company reports another loss.
- 6 IBM expands** grid computing offerings in a bid to attract corporate users.
- 7 Angry IT pros** say the H-1B visa program is still keeping Americans unemployed.
- 7 Doubts about ROI** are slowing corporate handheld rollouts, say analysts, but some users report fast paybacks.
- 8 Cisco introduces** quality-of-service functions for nine of its switches and routers to create networks including VOIP capabilities.
- 10 EMC's newest** high-end Symmetrix disk arrays prompt IBM and Hitachi to announce their own storage upgrades.
- 10 Two vendors team** with EMC to develop e-mail storage technology to help financial services firms comply with record-keeping requirements.
- 12 The Department** of Homeland Security must deal with leadership turnover while retaining private-sector credibility.
- 16 Computer Associates** integrates a portal server with business intelligence tools to reduce integration headaches.
- 49 Niche vendors** catch users' eyes at Lotusphere with additions that fill gaps in Lotus and Domino functionality.

TECHNOLOGY

- 23 Moving Into Mainframe Linux.** Mainframe Linux offers clear advantages to corporations, if you choose the applications carefully.
- 29 QuickStudy: Session Initiation Protocol.** Learn more about this signaling protocol for Internet conferencing, telephony, messaging and other networked communications.
- 30 Emerging Technologies: Task-Centric Storage Takes the Stage.** Intelligent, inexpensive ATA-based storage appliances may redefine the role of the application server.
- 32 Security Manager's Journal: Missing PKI Root Key Causes a Panic Attack.** When the root key appears to have been compromised, Vince Tuesday faces the task of rebuilding the entire public-key infrastructure.

MANAGEMENT

- 37 How To:** You aren't a security expert or an auditor, yet you're the go-to guy for the company's IT security audit. Here's how to get started.
- 38 Perk Watch: BMWs Are Out, Bowling Is In.** Some companies on tight budgets are doing their best to keep IT talent.
- 40 Steal This Idea: Getting the Right Person at the Right Time.** Dow reduced its hiring cycle time by consolidating its worldwide recruiting and hiring efforts through an ASP.

OPINIONS

- 8 On The Mark: Mark Hall** interviews a slew of security experts who are frustrated by users' ongoing failure to secure their systems.
- 20 Maryfran Johnson** warns IT pros about the inevitable future in which more of their in-house jobs will be outsourced.
- 20 Pimm Fox** claims vendors try to clamp down on free speech by users through licensing restrictions. A recent court case, he says, helps to right that wrong.
- 21 Thornton May** thinks IT executives tell the truth — most of the time — but seldom communicate it effectively.
- 34 Robert L. Mitchell** says competing vendors should stop blaming Microsoft for their troubles and pay more attention to users' needs instead.
- 50 Frankly Speaking: Frank Hayes** smacks CERT, the government-funded cyberthreat information clearinghouse, for passing along security alerts to bug chasers' competitors and potential clients — prior to public release.

DEPARTMENTS/RESOURCES

At Deadline	6
News Briefs	8, 14
Letters	21
Company Index	48
How to Contact CW	48
Shark Tank	50

ONLINE

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Prevent Data Loss

STORAGE: Avoid the dreaded "I told you so" by using these preventive tips. **QuickLink: k1700**

Don't Blame Microsoft

DISCUSSION FORUM: After reading Robert L. Mitchell's column, "Just Pin It on Microsoft," on page 34, post your opinion and read what others have to say. **QuickLink: a2850**

The Business of Security

KNOWLEDGE CENTER: See how new federal rules on privacy protection affect identity management technology, as well as contrasting strategies used by Microsoft and the Liberty Alliance Project. **QuickLink: k1600**

Linux on Laptops

OPERATING SYSTEMS: SCO Group's senior vice president of technology offers tips on how to achieve a successful install. **QuickLink: 35852** And don't miss the related online forum discussion: Is Linux ready for laptops? **QuickLink: a2880**

Second Chance at Wireless

MOBILE/WIRELESS: Made2Manage System's Gary Rush says Microsoft's introduction of the Mobile Internet Toolkit has given companies a new chance to explore a wireless manufacturing strategy. **QuickLink: 35996**

Smarter Tools, Dumber Developers?

DEVELOPMENT: Can anyone explain why tools get smarter while developers grow dumber? Or is columnist Linda Hayes missing something? **QuickLink: 35887**

What's a QuickLink?

On some pages in this issue, you'll see a QuickLink code pointing to additional, related content on our Web site. Just enter that code into our QuickLink box, which you'll see at the top of each page on our site.

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AT DEADLINE

Vendors Promise Mobile Java Spec

A group of vendors led by Sun Microsystems Inc. detailed a road map for creating a unified specification that companies could use to develop wireless Java applications. The group, which includes more than a dozen makers of mobile devices, said the specification should be finished by midyear. Compliant devices are expected to be available starting in the fall.

IBM Plots App Server Upgrade

IBM announced that it's developing an upgrade of its WebSphere application server software that will include new capabilities for managing business-process workflows. The upgrade is due by midyear and will include new Web services functionality that Sun is building into the next version of its Java 2 Enterprise Edition technology, said Scott Hebner, the director of WebSphere marketing at IBM.

AMD Revamps 64-bit Chip Plans

Advanced Micro Devices Inc. said it plans to launch its 64-bit Opteron microprocessor for servers and workstations in April. But the Sunnyvale, Calif.-based company added that its Athlon 64 chip for desktop PCs has been delayed for a second time. The Athlon 64, which also is a 64-bit device, is now due for release in September, AMD said.

Short Takes

SUN said it will announce its plans to expand the level of Web services support in Java this week but wouldn't disclose any details. ... THE INSTITUTE FOR INFORMATION INFRASTRUCTURE PROTECTION, a group of 23 colleges and research laboratories, released a report calling for the U.S. government and private-sector companies to increase spending on cybersecurity research.

SEC Examines i2's Books as Vendor Reports Another Loss

Firm plans to reaudit 2000, 2001 results

BY MARC L. SONGINI

SUPPLY CHAIN software vendor i2 Technologies Inc. last week reported its fifth straight quarterly loss and confirmed that the U.S. Securities and Exchange Commission is now probing its finances.

The Dallas-based company said the SEC has opened an informal inquiry into its financial reporting for 2000 and 2001. The SEC's decision came after i2 told the agency about two former i2 executives' allegations of accounting irregularities.

I2 last week also announced that its board has asked auditor Deloitte & Touche LLP to reaudit the numbers that the company reported for 2000 and 2001. The company noted that the new audit could impact its fourth-quarter 2002 results, which it described as preliminary.

"It would be very discouraging and disruptive to see i2 lose focus," said Richard Scheerer, vice president of IT

at The Clarks Companies, North America. Clarks, a shoemaker in Newton Upper Falls, Mass., has implemented several of i2's order management and supply chain planning applications.

Scheerer said i2 hasn't let him down so far. But he added that he's always concerned about the viability of his software vendors, and he emphasized the need for i2 to continue upgrading its product line.

On the other hand, Gene Hunt, chairman of the Atlanta-based i2 User Group's board of directors, ap-

plauded the firm's reaudit plans. "We think this indicates a sense of openness and confidence about the business," Hunt said in a letter to i2's management.

Hunt, who is a member of the technical staff at Texas Instruments Inc. in Plano, Texas, added in the letter that i2's employees "are demonstrating

a desire to maintain and improve customer satisfaction."

"While this could defocus i2, it should have little effect on the user base," said Gartner Inc. analyst Karen Peterson. She added that the reaudit and SEC disclosures "masked the fact that i2 actually did better than expected last quarter."

I2 CEO Sanjiv Sidhu downplayed the chances that the company's financial picture would be radically changed by the new audit. Referring to the preliminary fourth-quarter results, Sidhu said i2's manage-

ment has "basic comfort in their stability."

I2 announced a fourth-quarter loss of \$12.4 million, which in-

cluded a \$23 million restructuring charge to cover the cost of additional layoffs. Revenue totaled \$119.9 million, down from \$193.9 million reported for the fourth quarter of 2001.

It would be surprising if i2 users didn't have any concerns about the current situation, said Andrew Ball, a London-based analyst at Frost & Sulli-

THE VIEW FROM i2

CEO Sanjiv Sidhu talks about i2's problems and efforts to turn it around:

QuickLink 35956
www.computerworld.com

Financial Probe

Key events leading up to the SEC's decision to examine i2's accounting practices:

■ The SEC is following up on i2's Form 10-Q filing for last year's third quarter, in which the company said it was reauditing its results for 2000 and 2001.

■ The internal reaudit was prompted by complaints from two former i2 vice presidents about a wide variety of alleged financial improprieties.

■ According to the 10-Q filing, the two claimed that i2 had faulty accounting and revenue-recognition procedures and inadequate financial controls.

■ The audit committee of i2's board found the allegations to be groundless, but the company has asked its external auditor to check the numbers.

van Inc. Ball added that the problems at i2 stem from the company's behavior during the boom years of IT industry growth. "I2 flew too close to the sun during the good times and is now, like Icarus, paying the consequences," he said. ▀

IBM Targets Corporate Users With Grid Computing

BY JAIKUMAR VIJAYAN

IBM last week announced an initiative to expand its grid computing offerings from its traditional niche in academia and research to commercial enterprises.

Under the plan, IBM will deliver 10 separate grid computing bundles optimized for companies in five vertical industries.

For financial services users, IBM is offering a trading analytics acceleration grid and an IT optimization grid to help exploit underutilized computing and storage resources.

Similarly, for users in the life sciences space, IBM will offer grid technologies that can dramatically increase the number of calculations processed during drug research. And an engineering design grid is aimed at improving resource utilization for automotive companies.

The goal is to let new users take advantage of the same collaborative computing functionality that grid computing has delivered to others for several years, said Tom Hawk, general manager of IBM's grid computing business.

"What we have done is to take preconfigured IBM software, middleware, hardware and integration functionality and box it up" for use in various industries, Hawk said.

Lower Cost of Entry

Butterfly.net Inc., a provider of multiplayer online PC, console and mobile games, has based its network on IBM grid computing technologies.

Butterfly is using the open-source Globus Toolkit, together with a grid-enabled version of IBM's WebSphere application server and some in-house software, to link more than 500 IBM blade servers across multiple cities.

The company first considered using large servers and

clustering technologies. But the grid approach allows for better resource utilization and more flexibility in allocating resources to applications as they are needed, said David Levine, CEO and founder of the Martinsburg, W.Va., firm.

"The cost of entry is also a lot lower because you can start with commodity systems," Levine said. "I can see where an approach like this might make sense" in the markets that IBM is now targeting.

As part of the initiative, IBM last week announced that it will work with two grid middleware vendors — Platform Computing Inc. in Markham, Ontario, and DataSynapse Inc. in New York — to deploy grids in enterprises. ▀

H-1B Visa Count Down, Anger Up

Jobless protesting program despite a decrease in the number of H-1Bs issued

BY PATRICK THIBODEAU
WASHINGTON

In a year when the U.S. began what has been characterized as a jobless recovery, immigration authorities issued 79,100 H-1B visas, a sharp decline from previous years. But that's cold comfort for displaced workers.

The number of H-1B visas issued in the fiscal year that ended Sept. 30 was well under the 195,000 cap set by Congress, and less than half the 163,600 issued by the U.S. Immigration and Naturalization Service in fiscal 2001.

Supporters of the H-1B program say the decline indicates that the program is working, is self-regulating and isn't being abused by employers. H-1B visas are used to bring skilled workers, many of them IT professionals, into the U.S. They are good for up to six years.

But opponents, who are increasingly coalescing into grass-roots organizations, say the H-1B numbers tell only part of the story. They contend that employers are still bringing in large numbers of foreign workers, but they're doing so under programs such as the L-1 visa, which is used for employees who are transferred by multinational firms to work in the U.S.

Much attention, however, will be focused on the H-1B cap, which will remain at

195,000 this year but is set to decline in fiscal 2004 to 65,000.

Harris Miller, president of the Information Technology Association of America in Arlington, Va., said he doesn't know whether his industry group will fight the decrease to 65,000. "It will be hard to convince Congress" of the need for a higher cap "if you have no recovery or a jobless recovery," he said.

Among the grass-roots opposition organizers is Peter Bennett, a Danville, Calif., resident who operates a Web site called NoMoreH1b.com. According to Bennett, many dis-

placed workers are ready to act if Congress moves to increase the cap. "It will trigger an onslaught of calls" to lawmakers, he said.

5.1% Unemployment Rate

One organization that has been critical of the H-1B program is the IEEE-USA, a unit of the Institute of Electrical and Electronics Engineers Inc.

According to the Bureau of Labor Statistics, there are 94,000 unemployed computer scientists in the U.S. That's an unemployment rate of 5.1% in that field, said George F. McClure, who chairs the IEEE's Career and Workforce Policy Committee. H-1B visa holders "are all competing for the same small pot of jobs, and we don't think that is a good thing," he said.

Eight weeks ago, some unemployed IT workers in Connecticut formed The Organization for the Rights of American Workers. It started as an informal networking effort, but an organizational meeting required a hall to accommodate 65 attendees. The group

“We have members that are about to lose their homes. We have to make the public aware of what's going on.”

JOHN BAUMAN, VICE PRESIDENT,
THE ORGANIZATION FOR THE RIGHTS
OF AMERICAN WORKERS

now has 200 members.

"We have members that are about to lose their homes," said John Bauman, vice president of the Meriden-based organization. "We have to make the public aware of what's going on."

Nate Viall, a Des Moines, Iowa-based recruiter who specializes in finding candidates for IBM iSeries application development, said that although there's no shortage of qualified U.S. workers to fill those jobs, he has seen U.S. workers lose out to H-1B visa holders. "It's always about the money," said Viall. ▀

Beyond the Cap

	Fiscal 2000	Fiscal 2001
Visa cap	195,000	195,000
Visas issued	163,000	79,100
Visas issued in exempt category*	342,000	215,000

* Exempt category includes organizations such as schools and nonprofit research groups.

Analysts Say Doubts About ROI Are Slowing Corporate Handheld Rollouts

Mobile device sales drop off, although some users are reporting fast paybacks

BY BOB BREWIN

Vendors of handheld devices had "dismal" sales last year, with worldwide product shipments dropping 9.1% from their 2001 level, according to a report released last week by Dataquest Inc.

That finding dovetails with a report on the handheld market released in December by Framingham, Mass.-based IDC, which estimated that sales of the devices in 2002 would be down 2.1% on a year-over-year basis. Dataquest and IDC analysts both said that slower rates of adoption by corporate users are hurting the once-hot handheld market.

Todd Kurt, an analyst at San Jose-based Dataquest, estimat-

ed that more than 70% of the handhelds sold last year were bought by consumers. The corporate market stagnated due to the weak economy and a perception among users that handhelds "are not yet capable of delivering sufficient return on investment," he said.

Making the Effort

However, some experienced users disputed Kurt's take on ROI and said that if implemented the right way, mobile devices can have a quick and continuing payoff in corporate settings. But doing it right can take some work, they added.

Andy Johnson, general manager of AEX LLC, a Phoenix-based financial courier service

that operates in 100 cities in seven Southwestern states, faulted handheld vendors and their software partners for not developing applications that can be easily adopted by various vertical industries.

AEX has equipped 54 of its couriers with ruggedized handheld devices made by Symbol Technologies Inc. in Holtsville, N.Y., as well as in-truck Global Positioning System receivers and mobile applications developed by At Road Inc. in Fremont, Calif.

Johnson said AEX has gotten a significant return in terms of increased productivity from the technology. But he added that although At Road provided AEX with a template, the software needed to be modified to meet its needs.

Tom Allen, At Road's chief operating officer, said some IT

managers are reluctant to embrace mobile devices because of the cost and complexity of hooking them into corporate systems. Moreover, many users are simply confused by all the rival devices and operating systems on the market, he said.

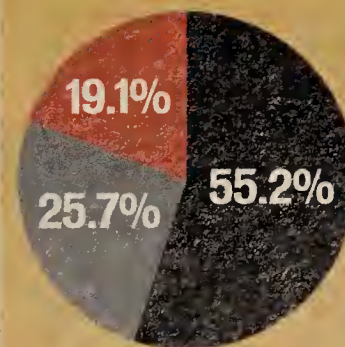
Rob McClellan, director of supply chain management and e-services at Taylor Made Golf Co. in Carlsbad, Calif., said he's in the process of deploying Symbol handhelds to an 85-person sales force. The goal of the rollout is to increase productivity and improve inventory management at the maker of golfing equipment and apparel.

McClellan said salespeople who already have the handhelds use their bar-coding capabilities to track inventories at golf pro shops and equipment stores. Automating that process alone saves an hour per worker each day, he said. And since the sales force can now transmit inventory data

electronically instead of faxing it, McClellan said he is receiving information that he needs to forecast buying trends on a more timely basis. ▀

Palm's Up

Dataquest's breakdown of 2002 handheld device shipments, by operating system:



6.7 million devices running the Palm OS operating system

3.1 million devices running Microsoft's Windows CE and Pocket PC software

2.3 million devices running other operating systems

SOURCE: DATAQUEST INC., SAN JOSE

BRIEFS

HP, Delphi Expand SAP Services Deal

Hewlett-Packard Co. said it has expanded a technology and IT services deal under which it runs SAP AG's business applications for Delphi Corp., a Troy, Mich.-based supplier of automotive parts. Under a new five-year agreement, SAP systems for Delphi's operations in North America and Singapore will be consolidated on HP servers and managed from the vendor's Toronto data center.

Alcan Outsources Operations to CGI

Alcan Inc., a Montreal-based maker of aluminum and packaging materials, said it has finalized a 10-year IT outsourcing deal valued at about \$110 million (U.S.) with CGI Group Inc. CGI, also in Montreal, will take over management of Alcan's help desk operations, data centers and messaging systems. The two companies had announced a tentative agreement last July.

IBM, British Airline Agree on Pact

IBM and Luton, England-based Britannia Airways Ltd. said they're developing a system that will use IBM's ThinkPad X24 notebook PCs and a wireless network to electronically store flight manuals and safety information in airplane cockpits. The data will be updated via the wireless link. The deal is worth about \$1.6 million, IBM said.

Short Takes

European Union officials said **MICROSOFT CORP.** has agreed to make "substantial changes" to its .Net Passport identity management software in order to conform to European data privacy laws. . . . **SAP** dropped the dot-com reference from its applications product line, which is now called mySAP Business Suite.

MARK HALL ■ ON THE MARK

IT Users Botch Security Again . . .

. . . and again. The Slammer worm being the latest in a long history of **utterly incompetent computer security** procedures by IT systems managers. Blame software developers, if it makes you feel better. But IT buyers are the major problem. Security vendors would despair at the consistent foolishness of users if they didn't make so much money from fixing the problems — usually after the fact. "IT buyers have tremendous control over the quality of security in the products

they buy, but they don't use it," argues Jerry Brady, chief technology officer at Guardent Inc. in Waltham, Mass. Instead, he says, all users ask of software vendors is that the products be quick to market, compatible with the old stuff and cheap. **Well, you get what you pay for.** Brady's company offers consultation and managed security services to companies that, by and large, have already been burned by a costly security breach. He says packaged software is bad, but in-house developers "are no better or smarter than those at Microsoft or Sun." He claims that little has been learned by programmers over the years. To wit: "I find the same three programming errors in applications today that cause 90% of the security problems that I found 10 years ago." For those who need a refresher course, they are: 1) buffer overflows, 2) format string errors, and 3) user input validation failures.

■ Robert Handler, an analyst at Meta Group, thinks there has been a "**collective consciousness change since 9/11**" on designing security into systems from the get-go. But he doesn't see a "holistic way" for enterprise IT architects to accomplish it today. Jan Popkin, CEO of New York-based Popkin Software & Systems Inc., a com-

pany that has been selling IT system architectural tools since 1986, agrees that 9/11 was a turning point. The company bolstered the security features in its recently released System Architect V9 and will do even more in the next version slated for later this year. In addition to more tightly integrating security processes into the next upgrade, Popkin will add support for the new **Department of Defense Architectural Framework** and integrate a wider array of XML-based business process modeling languages. ■ Since you can't rearchitect your lega-

cy environment, you might consider **exerting a little more control over it** by adding security tools such as STAT Neutralizer from Harris Corp. in Melbourne, Fla. The 2.0 version of STAT Neutralizer ships later this month with support for Windows XP Service Pack 1 and Windows 2000 Service Pack 3, as well as support for HTTP, e-mail clients, instant messaging applications and other services. The software doesn't detect intrusions by viruses or worms. Rather, it loads with the OS kernel and, through specific rules that come standard or are added by system administrators, **prevents disallowed behavior by applications.** According to Richard Ealiari, director of product strategy at Harris, security problems like the Slammer worm occur because sysadmins never get around to loading existing patches because they have to manage the downtime problem. Plus, most system managers don't want to add patches willy-nilly to their computers without first testing them with existing applications. STAT Neutralizer can "give users peace of mind" until the patches are tested and installed, Ealiari says. ■ **More than peace of mind** is what you'll get starting today from Gilian Technologies Inc. The Redwood City, Calif.-based company will offer a **minimum \$25,000 money-back guarantee** for Web applications and content that are protected by its G-Server security appliance. ■ Apple's penchant for **secrecy mitigated by its love of self-promotion** merges messily with its Web site housing the "public beta" of the rather old-fashioned X11 Windows System, the Unix world's graphical user interface. It will run on the Mac along with the graphically rich OS X (<http://developer.apple.com/qa/qa2001/qa1232.html>), making the project sort of a technological oxymoron. Appropriately, like the future of X11 on the Mac, most of the links on the page go nowhere. ▀

Good Deals

J2EE developers tomorrow can get a free trial copy of ObjectAssembler 2.5 from ObjectVenture Inc.'s Web site. The new release adds pattern and strut support among other new goodies. If you like it, you'll fork over \$1,999.

JMR Electronics Inc. today ships its new Fortra IDE storage systems for high-performance, high-capacity Ultra SCSI and Fibre Channel RAID systems starting at \$9,950 and \$10,950, respectively.

Cisco Launches Network Quality-of-Service Tools

BY MATT HAMBLÉN

Cisco Systems Inc. last week introduced automated quality-of-service functions for nine of its switches and routers, a move aimed at helping users create converged networks that include voice-over-IP (VOIP) capabilities.

Currently, setting up IP networks with VOIP support often requires IT managers to do complex manual tuning of

each router in a LAN or a WAN, said Zeus Kerravala, an analyst at The Yankee Group in Boston. The settings are designed to look at IP packets and zip them on their way if they are deemed high priorities, such as voice or video traffic. Because the process is so complex, only 9% of companies even turn on quality-of-service functions, Kerravala said. The result, he added, is

that some functions, such as VOIP, might not be adopted as widely as they could be.

Cisco claimed that its AutoQoS technology can help companies speed up IP network deployments and reduce installation costs by as much as two-thirds. AutoQoS is free to users with licenses and maintenance agreements for Cisco's internetworking software.

Glenn Whalley, head of IP network engineering at BT-exact Technologies in Adastral Park, England, is using AutoQoS to set up routers that support virtual private network

services offered by the BT Group PLC unit. "[Quality of service] is complex to implement, and anything automating that is a good thing," he said.

Nortel Networks Ltd. provides technology similar to AutoQoS but hasn't widely publicized its availability, according to Kerravala. Ralph Santitoro, director of network architecture at Nortel, said his company has offered default quality-of-service settings since 1999 on its Passport 8600 Layer 3 core router, several other routers, a VOIP gateway and IP phones. ▀

THE STRAIGHT GOODS ON SOFTWARE INTEGRATION.

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IBM, Hitachi Try to Counter EMC's Symmetrix Upgrade

Storage vendors jockey for technology leadership in high-end disk arrays

BY LUCAS MEARIAN

EMC CORP.'s planned announcement today of a new line of its high-end Symmetrix disk arrays is shaking up the storage industry, with competitors such as IBM and Hitachi Data Systems Corp. scrambling to steal EMC's thunder with technology upgrades of their own.

Details about EMC's plans began to emerge in January [QuickLink 35699]. Industry sources last week said the

company is expected to roll out an all-new architecture boasting 128 direct, dedicated paths between the channel directors and internal caches in the Symmetrix arrays. That will increase system bandwidth from 1.6GB/sec.

STORAGE

now to 64GB/sec., four times that of Symmetrix's closest competitor, Hitachi's Lightning 9900V array, the sources said.

Santa Clara, Calif.-based Hitachi last week tried to preempt EMC's move by announcing that it has doubled

the storage capacity of the Lightning 9900V to 126TB in a RAID-5 configuration by adding new 146GB drives.

In addition, IBM today is expected to unveil a Bluefin-compliant storage management interface for its Enterprise Storage Server Model 800, known informally as Shark. Bluefin, a draft specification that the Storage Networking Industry Association hopes to finalize by the third quarter, is aimed at making it easier to manage multivendor storage-area networks.

IBM also plans to announce new disk drives that operate 50% faster than the current devices used in the Shark ar-

rays, as well as expanded data-copying and disaster recovery features for mainframes that run Linux.

"Both [IBM and Hitachi] are clearly paying a lot of attention to EMC's announcement. They have no choice," said Tony Prigmore, an analyst at Enterprise Storage Group in Milford, Mass. "IBM's protecting its mainframe position, and Hitachi is protecting its capacity lead."

EMC is expected to announce three new Symmetrix models, increasing the product line's top capacity from 70TB to more than 100TB.

"They [EMC] really believe the architecture they have puts

KEY DETAILS

Rival Rollouts

EMC will announce three new Symmetrix models, increasing maximum disk capacity to more than 100TB and internal bandwidth to 64GB/sec.

IBM plans to add faster disk drives, a Bluefin-compatible management interface and expanded Linux storage features to its Shark arrays.

HITACHI is doubling the capacity of its Lightning 9900V arrays to 126TB in RAID-5 configurations and boosting the number of I/O connections that the devices support.

them at a tremendous performance advantage," Prigmore said. "That means when I get an unexpected workload, now I can manage through it without compromising the performance of any given application."

Toni Sacconaghi, an analyst at Sanford C. Bernstein & Co. in New York, said in a research note that EMC's ability to boost Symmetrix sales and regain lost high-end market share depends "in part on how it chooses to price its software and how competitors such as [Hitachi] respond in hardware pricing."

Sacconaghi said he doesn't expect a full refresh of the Lightning product line until next year. But Hitachi will likely announce several capacity and bandwidth upgrades this year, he added.

Likewise, Brian Truskowski, general manager of storage software at IBM, said the planned addition of a Bluefin-based programming interface "is only the beginning of what will be a series of product announcements . . . around the issue of interoperability." ■

EMC, Other Vendors Team On E-mail Archiving System

Designed to help financial firms meet storage regulations

BY LUCAS MEARIAN

EMC Corp. last week said it's teaming with Iron Mountain Inc. and a vendor of content-archiving software to offer technology and services aimed at financial services firms that are under pressure to comply with federal mandates to retain e-mail messages.

The joint offering is built around EMC's Centera disk arrays, which are designed to store fixed data, and Enterprise Vault for Microsoft Exchange, a message archiving application developed by KVS Inc. in Arlington, Texas.

Boston-based Iron Mountain, which manages physical and digital records for corporate users, will provide storage services and can host the Centera arrays for banks and brokerages that don't want to install the devices in-house.

John McKinley, chief technology officer at Merrill Lynch & Co. in New York, said the regulatory requirements for storing e-mail and being able to quickly retrieve messages has created an environment in which managed archiving services could be useful.

"I think cost is certainly an important factor," said McKinley, who plans to leave Merrill Lynch at the end of this

month. Large financial services firms might be able to afford to install and manage the necessary technology internally, McKinley said. "But there are a lot of organizations where putting the type of infrastructure in place to address all the compliance requirements may not make sense," he added.

The vendors declined to disclose pricing for the combined offering. However, a 5TB Centera array has a list price of

\$205,000, KVS's software costs about \$250,000 for a 10,000-mailbox license, and Iron Mountain charges \$30,000 to \$40,000 for basic auditing and storage services over an initial 18-month period.

Using a Web portal, Iron Mountain will also be able to access e-mail traffic and other regulated data for the government if a company is audited or a disaster occurs, said Roy Sanford, vice president of content-addressed storage at Hopkinton, Mass.-based EMC.

The idea of hosted storage isn't unusual, and most of the

top storage-management software vendors offer e-mail archiving and search tools. But Peter Gerr, an analyst at Enterprise Storage

Group in Milford, Mass., said the bundled technology and services being offered by EMC, Iron Mountain and KVS are unique.

Their package may not necessarily be less expensive than piecing together an e-mail archiving system would be, Gerr said. But, he noted, "there's a

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Archiving Allies

The three vendors will provide the following e-mail retention capabilities:

EMC'S CENTERA array will store messages on ATA disk drives, giving each item a unique 27-character identifier to guarantee the data's authenticity.

KVS'S SOFTWARE will handle mailbox management, regulatory compliance and complex content-search functions.

IRON MOUNTAIN will manage long-term archiving and indexing of messages at customer sites or in its own data centers.

lot of value in the fact that it's an integrated and pretested solution."

The KVS software also offers greater granularity than storage management applications do, in its ability to search out specific e-mails, Gerr said. "That's the nature of these SEC inquiries: 'Give us every piece of correspondence over the past year with these seven terms,'" he noted. ■

Correction

Our story about Foote Partners' predictions on outsourcing trends on page 12 of last week's issue characterized the data as part of a "new report." In fact, the research is still ongoing, and the data was only preliminary.

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Homeland Security Dept. Faces Leadership Void

Private-sector IT waits to see who, what emerges

BY DAN VERTON

IN ONE of his first moves as secretary of Homeland Security, Tom Ridge last week appointed former J.P. Morgan Chase Bank executive Alfonso Martinez-Fonts Jr. to serve as special assistant to the secretary for the private sector.

But much work remains to fill key leadership positions at the newly formed U.S. Department of Homeland Security and avoid losing the momentum in the public/private partnership on cybersecurity and critical-infrastructure protection, Bush administration and private-sector officials said.

"I worry that if the transi-

tion period drags on, we'll lose much of the gains made in establishing a trusted relationship with the leaders of critical infrastructure," said Roger Cressey, former chief of staff of the President's Critical Infrastructure Protection Board. "It is imperative that the new department sends a clear signal to the private sector on who the key contacts are and, most important, that they are empowered to speak on behalf of the secretary."

The sense of urgency comes as several high-level officials — who have led the government's efforts during the past several years to build a partnership with the private sector — have either left or plan to leave government service.

Richard Clarke, whose career as the nation's first anti-terrorism coordinator and cybersecurity czar spanned three administrations, plans to retire this month, *Computerworld* has confirmed. Clarke was instrumental in building the current partnership with the private sector and in drafting the national strategy for the defense of cyberspace, which has been signed by the president and will be released in final form this month.

Likewise, John Tritak, longtime director of the Critical Infrastructure Assurance Office (CIAO) at the U.S. Department of Commerce and another key player in the government's private-sector outreach effort, has also made a final decision to leave public service, according to sources close to him.

Add two more names to that list. Ron Dick, director of the FBI's National Infrastructure Protection Center (NIPC) since March 2001, left the agency in December for a position at El Segundo, Calif.-based Computer Sciences Corp.

And James Clapper, director of the National Imagery and

Mapping Agency and a former director of the Defense Intelligence Agency, has backed away from an offer to lead the new department's Information Assurance Division, sources close to the deliberations confirmed.

IT professionals' reactions to the changes were mixed.

John Ervin, a systems administrator at Tessy Plastics LLC in Lynchburg, Va., is more concerned about who's in the trenches. The government

needs to focus more on staffing frontline technologists to work with the private sector on stopping cyberattacks, he said.

But the departure of all of these "trusted interlocutors," as one private-sector official who spoke on condition of anonymity characterized them, means that the government is losing a lot of "institutional memory" at a time of great turmoil and uncertainty.

David Wray, a spokesman for the NIPC's transition office at the Department of Homeland Security, said all such fears of losing momentum in reaching out to the private sector are unfounded.

"We're bringing it all togeth-

I worry that if the transition period drags on, we'll lose much of the gains made in establishing a trusted relationship with the leaders of critical infrastructure.

.....
ROGER CRESSEY, FORMER CHIEF OF STAFF, PRESIDENT'S CRITICAL INFRASTRUCTURE PROTECTION BOARD

er under one roof, and we'll actually have resources and funding that will put us in a better position," Wray said. ▀

J.D. Edwards Upgrades CRM Tools, Adds Ties to Back Office

BY MARC L. SONGINI

J.D. Edwards & Co. last week took the next step in binding its back-office software with the customer relationship management (CRM) applications that the company bought through its acquisition of YouCentric Inc. in late 2001.

Denver-based J.D. Edwards announced Version 2.0 of its CRM suite, saying the upgrade includes 175 enhancements and expanded integration with its supply chain management and enterprise resource planning applications.

Robbie Herzig, senior marketing manager for CRM at J.D. Edwards, said the company's main objective for the new release "is to continue to build on the visibility the customers are asking for from the front office to the back office."

For example, J.D. Edwards has connected its contact center application to its field service software, letting mobile customer-service workers look at account histories, warranty data and other information, Herzig said.

There is also now a tie-in between the company's sales force automation applications

and supply chain software. That feature will give demand planners access to real-time data feeds from salespeople in addition to historical sales information, she said.

The supply chain and CRM integration appeals to Brian Capone, director of marketing

at Hutton Communications Inc., a Dallas-based dis-

tributor of wireless communications products. He said Hutton's sales force now relies on two systems — contact management software from Best Software Inc. in Reston, Va., and J.D. Edwards' OneWorld XE applications — to check inventory and do other supply chain-related functions.

But Hutton plans to replace Best's technology with J.D. Edwards' new CRM software within the next four months, Capone said.

The combination of the CRM and OneWorld XE applications should give Hutton's 50 mobile and in-house sales staffers an integrated set of software for doing things such as generating price quotes and checking product

stock levels, Capone noted.

J.D. Edwards is also embedding multichannel customer-contact capabilities in the CRM upgrade and adding an option that lets mobile workers run sales applications when they're off-line and then synchronize the data with back-office systems when they reconnect to their corporate networks, Herzig said.

At its Focus 2002 user conference last June, J.D. Edwards promised increased ties between its back-office applications and the CRM tools developed by Charlotte, N.C.-based YouCentric [QuickLink 30542]. J.D. Edwards bought

YouCentric 15 months ago after previously reselling Siebel Systems Inc.'s CRM software.

John Moore, an analyst at ARC Advisory Group Inc. in Dedham, Mass., said J.D. Edwards doesn't offer as full a set of CRM functionality as Siebel and other vendors do.

But for most of the midsize users that J.D. Edwards targets, the CRM software "fits perfectly," he said. ▀

Changing of the Security Guard

Who's Out?

RICHARD CLARKE, chairman of the President's Critical Infrastructure Protection Board

JOHN TRITAK, director of the Critical Infrastructure Assurance Office (CIAO)

RON DICK, director of the FBI's National Infrastructure Protection Center (NIPC)

JAMES CLAPPER, no longer in the running to take over the Department of Homeland Security's Information Assurance Division

Who's In?

ALFONSO MARTINEZ-FONTS JR., special assistant to the secretary for the private sector

HOWARD SCHMIDT, likely successor to Richard Clarke

NANCY WONG, acting director of the CIAO

ALAN JAMES PLEHAL, acting director of the NIPC

APPLICATIONS

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By the same token, you'll find an array of security features integrated into Cisco PIX® Firewalls, VPN Concentrators, IDS appliances, IP phones, wireless LAN equipment, content delivery appliances, and virtually every other network device Cisco builds, as well as the Cisco IOS® Software that binds them all together.

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Encryption: IPSec Virtual Private Networks provide secure tunnels across public networks, establishing secure connections for remote sites and mobile users.

Virtual LANs: Traffic on the LAN can be isolated based on users and applications or business requirements, shielding data from prying eyes.

Rate limiting: Network managers can set bandwidth thresholds, helping to prevent the deliberate or accidental flooding of the network.

Intrusion protection: The network continually scans for signs of hackers, taking immediate steps to stop them before damage is done.

Content filtering: Users are prevented from accessing objectionable Web content, minimizing legal exposure and reducing unnecessary WAN traffic.

SSL optimization: Exploding volumes of SSL traffic can be offloaded from servers, cost-effectively scaling application performance and reliability for network users, while simplifying certificate management.

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BRIEFS

Siebel, IBM Plan To Link Software

Siebel Systems Inc. and IBM said they plan to work together to integrate Siebel's customer relationship management (CRM) software with IBM's WebSphere middleware products. Siebel's application server technology will be used to support only CRM-specific functions in the future, the companies said.

SAP Adds Tool for Homeland Security Functions . . .

SAP AG announced an application that's designed to support homeland security functions, including border management, emergency planning and information analysis. The company said the Security Resource Management software uses its new NetWeaver application integration technology and includes e-government tools.

. . . And Reports Q4 Increase in Profits

SAP also reported its fourth-quarter financial results, which showed a 49% year-over-year increase in profits despite a small revenue dip. Net income totaled \$510 million at current euro-to-dollar conversion rates, up from \$343 million in the fourth quarter of 2001. Revenue fell 2% to \$2.45 billion, but SAP said it expects "modest" sales growth this year.

Short Takes

SYBASE INC. in Dublin, Calif., reported a \$9.8 million fourth-quarter loss as revenue fell 11% year over year to \$210.6 million. . . . The U.S. Supreme Court ruled that **NEXTWAVE TELECOM INC.** can keep 63 wireless spectrum licenses that the government tried to take back after the Greenwich, Conn.-based company sought bankruptcy protection in 1998.

Continued from page 1

Slammer

hold some responsibility for their negligence," said Mike Tindor, vice president of network operations at First USA Inc., an Internet service provider in St. Clairsville, Ohio.

Several of the network performance problems First USA suffered because of Slammer resulted from three unpatched systems that it was co-locating for customers. "Obviously, [the problems] could have been avoided if our customers had performed the proper security updates," Tindor said.

Yet despite the need, few companies have the resources it takes to keep current on all the recommended patches and security advisories that inundate them almost daily, users and analysts said.

"Systems administrators spend a lot of their time addressing day-to-day problems, so routine things such as updates get pushed into the background," said Jesse Fussell, president of Information Security Systems Inc., an Edgewater, Md.-based consultancy.

Patch Problems

Software patches themselves are often unwieldy and difficult to apply and sometimes can break the systems they are intended to fix.

For instance, the patch that Microsoft had made available for the hole Slammer exploited involved in some cases a "brutally slow and manual process," said Chip Andrews, owner of SQLSecurity.com, a site dedicated to securing SQL servers.

As a result, at least "some administrators put off the patch because of the sheer time it would take to patch a production machine," said Ben Koshy, technical manager at W3 International Media Ltd., a hosting company in Vancouver, British Columbia.

Pat Hymes, vice president of corporate information security at Wachovia Corp. in Charlotte, N.C., said maintaining patches can be a challenge for any organization.

"It can take a great deal of time and energy to download, test and implement service packs and hot fixes, especially in large organizations where they can impact hundreds of applications and thousands of servers," Hymes said. "The total cost of ownership for servers running some of these distributed [operating systems], databases and Web software is going through the roof due to the manpower being expended to maintain patches and respond to events like the SQL Slammer worm."

Claude Bailey, an IT security analyst at one of the nation's largest financial management firms, said the problem lies not in detecting the vulnerability but in deploying the patches and fixes across an organization of 50,000 employees and guaranteeing that the patch won't cause more problems.

"We tested the original patch [for the SQL vulnerability], and it had problems," said Bailey. And now, in the middle of tax season, there's too much to lose in deploying patches that break other parts of the network, he said. As a result, the financial firm has placed

a freeze on any such maintenance until tax season is over.

The patching issue becomes even harder when dealing with patches that touch core systems like a database server, said Eric Block, information security officer at Dallas-based Mary Kay Inc.

"We struggle with the same issues as the rest of the industry."

RICK MILLER, SPOKESMAN, MICROSOFT CORP.

"Database administrators can get very nervous when you tell them that a security patch could break their server," said Brock. As a result, decisions about patches sometimes can be-

come a "risk-rewards judgment call," he said.

Microsoft's Woes

Even Microsoft itself wasn't above such oversight last week, with several unpatched systems becoming infected by Slammer.

"We struggle with the same issues as the rest of the industry," said Rick Miller, a Microsoft spokesman. "Some don't patch for time management reasons, some out of oversight. At the end of the day, it should have been patched."

Vendors have contributed to the problem by failing to provide enterprise-class patching and updating pro-

cesses, said Paul Schmehl, adjunct information security officer at the University of Texas in Dallas. The university lost Internet connectivity for about 13 hours because of Slammer, according to Schmehl.

"Most vendors are still writing software for individual boxes instead of thinking about scaling processes to make them usable," he said.

It is in response to such concerns that Microsoft is revamping its processes for developing and distributing patches, Miller said.

For instance, the company has begun to make available easy-to-use installers for automating much of the patching process, Miller said. Microsoft is also working on tools that help companies scan their networks and identify vulnerable systems more efficiently, he added.

"We recognize that we need to do a much better job developing and delivering patches," Miller said. "We are working on it." ▀

Computerworld's Dan Verton contributed to this story.

MANAGE THOSE PATCHES!

New tools help, but there's still no easy way to identify new patches and prioritize installs:

QuickLink 30912
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Free Benchmarking Tool Could Have Detected SQL Hole

Not only could companies have slammed the door on the Slammer worm if they had installed the Microsoft patch, but they also could have prevented it by using a free benchmarking tool developed jointly by the government and the private sector.

The Consensus Minimum Security Benchmarks, also known as the Gold Standard, were made available to the public last July. Developed by five federal agencies in collaboration with the SANS Institute and the Center for Internet Security (CIS), the Gold Standard benchmark is used to test Windows 2000 Professional systems

for proper configuration [QuickLink 33500].

Alan Paller, director of research at the SANS Institute in Bethesda, Md., said a National Security Agency study of the benchmark concluded that by running it on a network, a company could eliminate more than 90% of known vulnerabilities. The database-specific vulnerabilities exploited by the Slammer worm would have been among them, he said.

Pat Hymes, vice president of corporate information security at Wachovia, a CIS member company, said the Gold Standard benchmark serves as an

"excellent baseline" for security testing. And because it's available for free, Hymes added, "there's no reason not to use it."

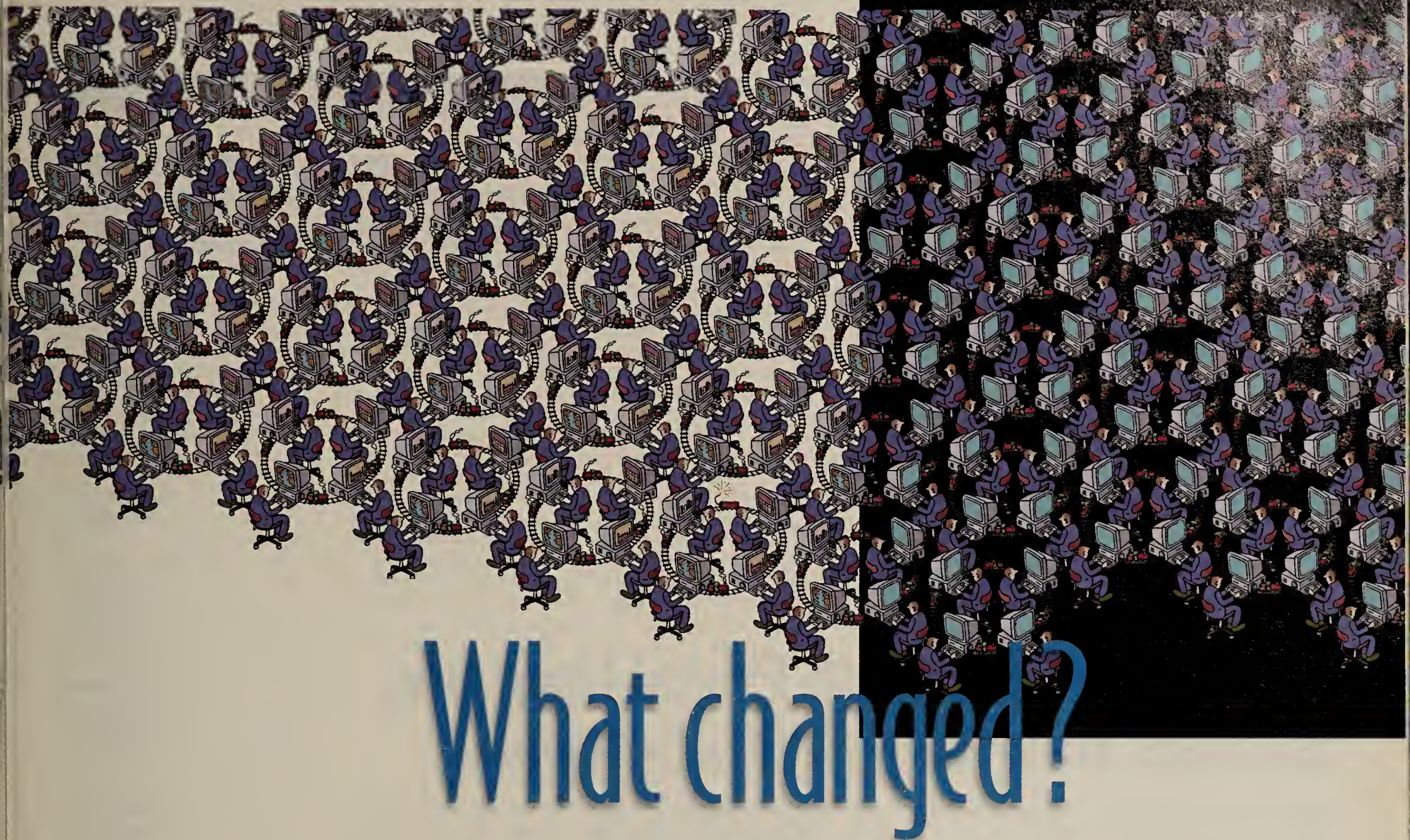
But awareness continues to be a challenge, said Clint Kreitner, president of CIS, a Hershey, Pa.-based nonprofit security standards consortium of more than 170 companies.

For example, Maurice Rieffel, an IT security analyst at a major energy company in Louisiana, said he was aware of the benchmark but hadn't realized that it tested for the SQL database vulnerability exploited by the Slammer worm.

- Dan Verton

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Continued from page 1

Cartridges

reproduce a cartridge chip's functionality.

And now, a company that has so far overcome the technological challenges posed by the printer makers is being sued by Lexmark International Inc. Lexmark alleges that Static Control Components Inc. (SCC) in Sanford, N.C., is illegally copying its printer computer chip technology.

The two sides will face off in a federal court hearing Friday in Lexington, Ky., the home of Lexmark. It's a case that the remanufacturing industry, also called the aftermar-



ket, sees as key to its fate.

"This lawsuit is an industry killer," said Tricia Judge, executive director of the International Imaging Technology Council in Freehold, N.J. If remanufacturers are blocked from reproducing computer chips, Judge said, they won't be able to offer

low-cost alternatives. "We have to win," she said.

Remanufacturers have about 25% of the toner cartridge market, according to industry estimates.

Eby-Brown Co., a \$3 billion wholesale distributor of convenience store goods, is a large user of re-

manufactured cartridges. The Naperville, Ill.-based company saves 20% to 50% buying remanufactured cartridges, said

Brian Freeman, network services manager at the company.

Eby-Brown has standardized on a limited model line of Hewlett-Packard Co. printers, so it's practical to keep an inventory of printer parts for in-house repairs, said Freeman. "Most companies are like me — we are extremely tied to our printer vendor," he said.

But this printer standardization also means the remanufactured toner cartridges are the only source of competition with those made by the printer maker. "Anytime there is no competition, the quality declines and the price increases," said Freeman.

The Lexmark lawsuit, filed Dec. 30, affects only two of SCC's 70 printer parts lines. SCC has stopped producing the chips for those cartridges, pending the outcome of this

U.S. Toner Cartridge Market

	Black & White		Color	
	2002	2006	2002	2006
VALUE	\$6.4B	\$8.2B	\$628M	\$1.1B
REMANUFACTURERS' SHARE	27%	35%	9%	21%

SOURCE: LYRA RESEARCH INC., NEWTON, MASS.

week's hearing. But SCC CEO Edwin Swartz said he worries other original equipment manufacturers (OEM) will follow Lexmark if it succeeds in court.

"The OEM is not the friend of the aftermarket," said Swartz. "Every cartridge that is remanufactured is one that the OEM doesn't get to sell."

Lexmark officials told *Computerworld* that the company offers users the option of buying cartridges without an upfront discount or "prebate" if

they choose not to return the cartridges to Lexmark. Those cartridges can be remanufactured without SCC's chip and "will perform without loss of functionality," they said.

SCC acknowledged that that's the case but contended that businesses buy only the discounted cartridges. "It's all a sham to stop remanufacturing," Swartz said.

Lexmark's 17-page lawsuit alleges that SCC's computer chip infringes on its software copyright as well as the Digital Millennium Copyright Act (DMCA), the controversial 1998 law established to combat piracy. And it's the DMCA infringement allegation that makes the case a potentially far-reaching one.

Although the DMCA was originally aimed at stemming piracy of software, music and motion pictures, its anticircumvention provision applies to almost any copyrighted material that's being accessed, said David Hayes, chairman of the intellectual property group at Palo Alto, Calif.-based law firm Fenwick & West LLP.

Under the DMCA, it's conceivable, for instance, that a hardware maker could prevent interoperability with other systems by citing the law's anticircumvention provisions.

"In order to block competitors from interoperating with your products, all you need is some flimsy authentication handshake," said Fred von Lohmann, an attorney at the Electronic Freedom Foundation in San Francisco. "This same tactic can be used in almost any arena." ▀

CA Ships CleverPath Portal Upgrade, Bundles New Tools With Software

Rollout part of plan to ease integration burden for users

BY MARC L. SONGINI

Computer Associates International Inc. this week plans to announce a software suite that tightly integrates its portal server with business intelligence tools, an end-user dashboard, access-control technology and other capabilities.

The planned rollout is part of a bundling strategy CA detailed last month for its CleverPath Portal software [QuickLink 34755]. By combining the portal with various tools, CA hopes to take away some of the integration headaches for IT managers who currently have to try to cobble together different applications, said Ricardo Antuna, senior vice president of CleverPath marketing at CA.

Among the planned enhancements, he said, is the latest CleverPath Portal release. Version 4.5 will have new Java

hooks and a redesigned user interface.

CA will also add several options to the portal, including a Lightweight Directory Access Protocol-compliant product that will let IT managers implement single sign-on approaches to authenticate end users who want to access information through the portal.

Compliance Tool

Also coming is a new dashboard-style user interface that will let business executives access key data via a single console, an end-user collaboration tool and a product that can scan a company's financial data to detect potential fraud. The latter tool, which is being offered through a co-development partnership with McLean, Va.-based IT consulting firm BearingPoint Inc., is aimed at helping companies comply with the Patriot Act and other government regulations.

Antuna said CA will also offer an upgraded version of a software tool that can be used

CA's Portal Push

The software vendor plans to announce the following new or enhanced products as part of its CleverPath Portal offering:

CLEVERPATH FOR GLOBAL COMPLIANCE, to help companies comply with financial reporting rules.

CLEVERPATH ADVANCED ACCESS CONTROL OPTION, for centralizing IT security via single sign-on capabilities.

CLEVERPATH COLLABORATION OPTION, to support collaboration across multiple communications channels.

CLEVERPATH DASHBOARD, which provides a single user interface for business executives or other employees.

to build business rules into systems. The new release will be able to generate rules that can invoke multiple systems through Web services and create automated business workflows.

CSX Corp. is already beta-testing Version 4.5 of the portal and may upgrade by year's end, said Lisa Balter, director of commercial applications at the Richmond, Va.-based operator of railroads and other shipping businesses. Currently, CSX runs both CA's Uni-center enterprise management applications and CleverPath Portal 3.5.

Balter said CSX is also exploring the possibility of rolling out the new end-user dashboard. The dashboard is appealing because it lets end users drill down into data and manipulate the information in different ways, she said. Buying an integrated suite is preferable to installing and linking multiple applications, as long as the functionality meets acceptable levels, Balter added.

CleverPath Portal 4.5 and the regulatory compliance software are available now, and CA said the other tools are due in March. Pricing for the full suite totals about \$200,000. ▀

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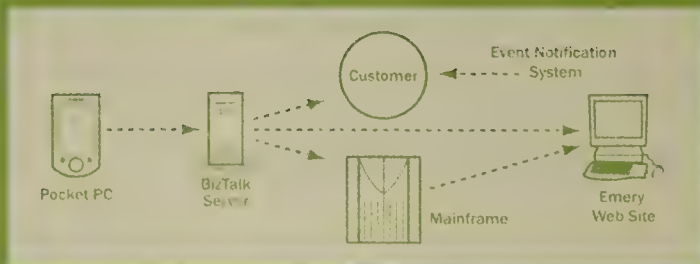
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QUICKLY

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Microsoft

MARYFRAN JOHNSON

Your Outsourced Future

READER REACTION was swift and scornful last week after we ran a story predicting that 35% to 45% of existing IT jobs in the U.S. and Canada will be outsourced, shifted to contractors or moved offshore within the next two years [QuickLink 35866]. So many jobs? So soon? No way. Headline-grabbing nonsense, this was.

That was my initial reaction, too. Analyst predictions tend to be notoriously off base, although we in the press cheerfully troop along and write stories about them anyway. As one reader put it, "I think that you guys are sometimes guilty of oversimplification of the issues." Indeed.

In 10 years, though, I suspect we'll see these painful outsourcing trends as the inevitable transition of a workforce in a maturing industry that plays a critical role in the emerging global economy. What IT is going through today mirrors what the automobile and electronics industries went through in previous decades, as once-valued, highly paid skills became commoditized, automated or more cheaply available elsewhere. New skills rise in value to keep pace with changing technologies, sharpening competition and shifting business needs. Outsourcing trends historically move in great waves, cresting in economic downturns when cost savings become paramount.

Our government has certainly embraced outsourcing. Federal IT outsourcing is expected to hit \$15 billion annually by fiscal 2007 — a 127% increase over the \$6.6 billion spent last year. That push is coming from two directions: a mandate to cut costs, and the increasing difficulty of replacing qualified technical and program management employees [QuickLink 35533].

We can also see outsourcing tak-



MARYFRAN JOHNSON is editor in chief of *Computerworld*. You can contact her at maryfran_johnson@computerworld.com.

ing hold in the bellwether financial industry. Mega-deals are making headlines again, as they did in the early 1990s. J.P. Morgan Chase recently signed a seven-year, \$5 billion deal with IBM. Bank of America inked a 10-year, \$4.5 billion deal with EDS. Canadian Imperial Bank of Commerce signed up for \$2 billion in IT services from Hewlett-

Packard. And so on. When Gartner researchers surveyed 39 Fortune 500 banks a few months ago, they found half of them outsourcing back-office and operational tasks more extensively than ever. Intensifying competition, a depressed economy and the attraction of the pay-as-you-go model for IT services are a powerful trio of business drivers.

Offshore outsourcing is also rising, as the economic lure of cheaper programmer labor continues to beckon. The one wild card that may slow the trend this year is the threat of war with Iraq. Yet Forrester Research estimates that the \$4 billion in U.S. wages that floated offshore in 2000 will become a riptide of \$136 billion and 3.3 million IT-related jobs by 2015. Web-based collaborative tools, inexpensive bandwidth and standardized business applications make it easier to contract out maintenance and support.

In spite of all this, I see a silver lining in this outsourcing cloud: the way American IT executives are rising — or will rise — to the challenge of managing projects involving workers outside their companies and around the world. Forrester is releasing a report today called “Unlocking the Savings in Offshore,” in which analyst John McCarthy lays out some of the best practices involved in making these projects work. They include centralized management, commitment and support from senior executives, and relentless project discipline.

No rocket science. No great mysteries. Nothing you can't handle. After all, isn't this the industry where the one constant is change? ▶

PIMM FOX

Free Speech Benefits IT

THE IT COMMUNITY has always thrived on free speech. The exchange of information gives users essential ways to compare experiences, develop new products and enhance the affordability and usability of all types of systems. Unfortunately, the benefits of openness aren't acknowledged in the end-user license agreements that vendors force customers to sign.

Now, though, vendors may find that they'll have to rewrite all those agreements to take into account a decision recently released by New York State Supreme Court Justice Marilyn Shafer.

The ruling focused on a case involving language contained in Network Associates' license agreement prohibiting a user from publishing a review of its security software without prior approval. The court clearly stated that the ban was deceptive because the license agreement gave customers the impression that they would be violating the law when they would not.

In essence, the court said making someone afraid to write something is the same as preventing him from writing it in the first place. And this typically is what goes on with a license agreement.

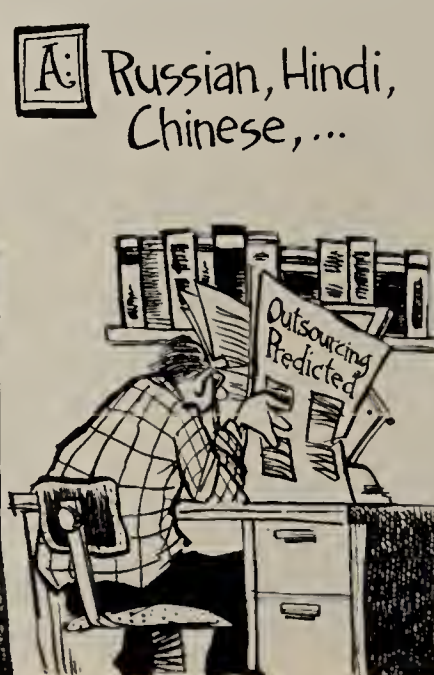
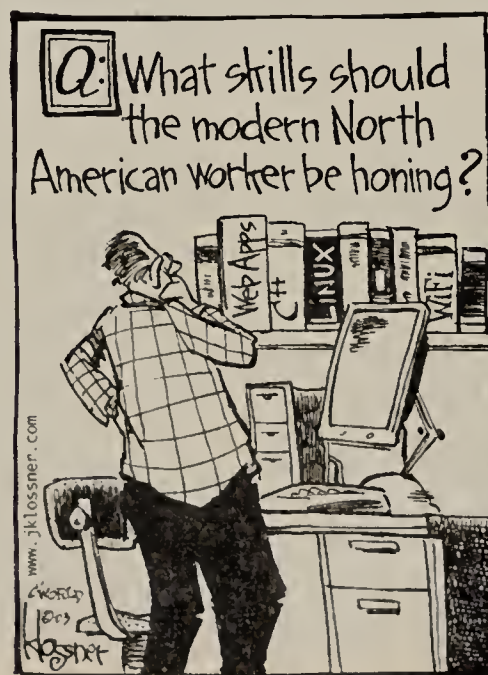
License agreements restrain customers from disclosing vital product performance data, make it impossible for them to seek legal redress for damages caused by product flaws and can bar them from revealing their vendor experiences without first obtaining approval from the vendor. It's hardly surprising, then, that most customers have only good stories to tell.

Where's the benefit in that?

Imagine the motion picture industry making movie viewers sign an agreement granting prepublication approval rights to anything they may write about a film. All the reviews would be positive. With such a policy, the automobile industry could ensure favorable coverage before a would-be reviewer even switched on the ignition.



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In response to the ruling (which it's appealing), Network Associates said it was trying to ensure that reviews reflect the latest release of a product. That's like saying you can't review *Casablanca* without prior approval if it's not the latest colorized release. The software industry seems to still believe it deserves special treatment — treatment placing most consumers at a disadvantage.

While the ruling doesn't have much force outside of New York (too bad Silicon Valley users didn't take the lead on this), it should embolden customers to demand less restrictive end-user agreements.

It's time to force vendors to craft language that helps your business, allows for dialogue to make it easier to do your job and inspires the openness IT users need to remain innovative and vital.

Without these changes, we've lost more than just better software; we've lost a basic tenet of free speech. ▀

THORNTON MAY Tell the Truth Effectively

INFORMATION technology leaders are often described as "ambassadors" for our profession. In the first part of the 17th century, the father of the British foreign service, Sir Henry Wotton, described the ambassadorial function this way: "An ambassador is an honest man sent to lie abroad for the good of his country."

In these trust-sensitized times, are IT leaders lying for the sake of our discipline when, say, they promote expensive projects? Or are they simply poor communicators who don't know their audience?

In association with the College of Business at Arizona State University, I examined the IT "messaging" ecosystem (i.e., message sender, messages being sent, executives receiving the messages and the actions taken because of the message) at 35 companies operating in 15 vertical markets. And while the results showed that IT executives are mostly telling the truth, they're not telling it in the right way.

Communications — what we say, to whom we say it and how we say it — is a significant and potentially success-limiting blind spot for many IT organizations. Most IT shops don't

measure the effectiveness of their messages (for example, whether the message sent produced the desired behavior change).

Non-IT executives prefer human-to-human, experience-rich interactions over any other form of information exchange. But the data from the study revealed the following distribution of communication modes by IT leaders:

- E-mail 33%
- Meetings 33%
- Telephone 20%
- Face to face 10%
- Other 4%

IT professionals *do not* spend enough time involved in high-impact, person-to-person conversations.

Research indicates that humans are nine times more prone to broadcast ideas than to receive them. So, for your "broadcasts" to have any impact, you must know your audience. If you're to have any luck inducing buy-in and



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decision not to give a speech on the anniversary of the Sept. 11 tragedy but rather to spend nearly two hours at Ground Zero embracing fathers, sons, mothers and daughters who lost loved ones. He understood the important context of the moment.

Knowing to whom we are communicating is one component of IT messaging. Knowing why we communicate is another. Gen. Ulysses S. Grant, coming upon the 14,000 Confederate defenders at Fort Donelson in February 1862,

behavior change, you must understand where your listeners' heads are. Many IT message senders have no map of the mental beaches their messages will wash up on. IT leaders *do not* spend enough time crafting their messages for their audience.

In an overcommunicated world, sometimes the best messaging strategy is to say nothing. Recall President George W. Bush's de-

knew exactly to whom he was speaking and exactly what he wanted when he crafted this message: "No terms except an unconditional and immediate surrender can be accepted. I propose to move immediately upon your works."

IT leaders may be articulate, but they can do a better job of communicating. Context-specific communication is best learned through role-playing exercises.

I look forward to the day when IT messages combine the hard-hitting journalism of Woodward and Bernstein, the social relevance and call to action of Upton Sinclair's *The Jungle* or Rachel Carson's *Silent Spring*, and the in-the-moment sensation of a *Survivor* episode. Then, perhaps, the corporate muggles (executives who aren't wizards of technology, to borrow a term from Harry Potter) will look forward to hearing from us. ▀

WANT OUR OPINION?

More columnists and links to archives of previous columns are on our Web site: www.computerworld.com/columns

READERS' LETTERS

Small Businesses Get Help Selling to Feds

THERE'S A PRESUMPTION within the federal government that large businesses can figure out the "federal labyrinth" on their own ["Federal Labyrinth Stifles IT Vendors," QuickLink 35305]. We assume, however, that small businesses need assistance in dealing with government contract opportunities. By law, almost every federal agency has an office that provides advocacy, outreach and assistance for small businesses. These points of contact can be found by going to an agency's Web site (see FirstGov.gov for direct links) and then searching for "OSDBU" (Office of Small and Disadvantaged Business Utilization).

In my limited experience as a small-business liaison, the most common mistake made by high-tech vendors is that they focus only on the attributes of their products and ignore the specific needs of the agency customer. Agencies can make purchases only to meet bona fide needs. If we don't need it, we can't buy it. And if we need it but don't know we need it, we can't buy it.

In addition to developing wonderful products, vendors must get to know their potential customers.

Learn our mission and culture. Join our professional associations. Attend our public presentations. Respond when we issue requests for comments. Contact the agency OSDBU. If you can't afford to do those things, set up relationships with resellers that can.

Brian X. Scott

Business utilization and development specialist, U.S. Geological Survey, Denver

Real Cyberthreats

RICHARD CLARKE, chairman of the President's Critical Infrastructure Protection Board, is right on track when he cautions us not to dismiss cyberthreats [QuickLink 35389], countering James Lewis' ill-advised conclusions in a recent paper for the CSIS, which proclaims that "much of the early analysis of cyber-threats and cyber security appears to have 'The Sky is Falling' as its theme" [QuickLink 35390].

Lewis' paper is based on some flawed premises. For example, it is my experience that there are many more SCADA systems that have Internet connectivity than he assumes. Certainly, there are fear-

mongers who enjoy stirring up reaction to the latest vulnerability, but as a whole, IT security and audit professionals paint a realistic and credible picture of risks, vulnerabilities and threats.

Betty Pierce

Vice president, Information Systems Security Association Inc., Denver chapter

Pervasive Courts

REGARDING your Future Watch article of Jan. 13, the Superior Court of Arizona in Maricopa County is using a form of pervasive computing in some courtrooms — e-courtrooms [QuickLink 35198]. We have a system that tracks the speaker and records the information on video. We have replaced court reporters in these courtrooms.

Priscilla Dance

Superior Court of Arizona, Maricopa County (Phoenix)

Handheld Benefits

THE ARTICLES on the costs of deploying handheld devices [QuickLinks 34328 and 34819] raised issues that everyone should be aware of, but they didn't note the benefits that can be derived by re-

ducing the number of devices used by a workforce. For example, a secure wireless access project can be designed so that employees can use handhelds to do things that would otherwise require a notebook. This can be done by creating a few custom Web pages that make inquiries to or update the CRM database. Thus, for a relatively small expenditure, the remote sales force no longer needs notebooks, but it has access to more timely information. If the handheld device is also a cell phone, the number of devices is reduced further.

Paul Dube

Business development, StratITech Consulting LLC, Randolph, N.J., PDube@StratITech.com

COMPUTERWORLD welcomes comments from its readers. Letters will be edited for brevity and clarity. They should be addressed to Jamie Eckle, letters editor, Computerworld, PO Box 9171, 500 Old Connecticut Path, Framingham, Mass. 01701. Fax: (508) 879-4843. E-mail: letters@computerworld.com. Include an address and phone number for immediate verification.

More letters on these and other topics are on our Web site: computerworld.com/letters

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your mainframe.

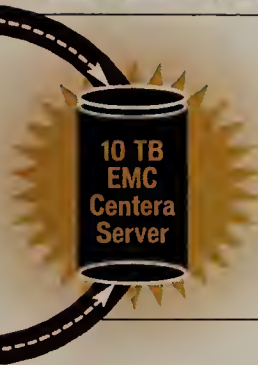
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EMERGING TECHNOLOGIES

Task-Centric Storage Takes the Stage

New inexpensive storage appliances based on Advanced Technology Attached disk arrays may redefine the traditional role of the application server. **Page 30**

QUICKSTUDY

Session Initiation Protocol

Learn more about this signaling protocol, which is used for Internet conferencing, telephony, presence, events notification and instant messaging. **Page 29**

OPINION

Just Pin It on Microsoft

The endless drumbeat of anti-Microsoft propaganda is a wonderful way for competitors to distract users from failures of their own making, says technology evaluations editor Robert L. Mitchell. **Page 34**

MAINFRAME LINUX can boost application uptime and reduce support costs. But users and analysts recommend acting carefully when choosing which applications to move to the open-source operating system and when training staff in the required skills.

The attraction of Linux on the mainframe isn't so much the low cost of licensing Linux or the fact that users can modify it and rely on a community of developers to fix bugs, users say. Instead, the big draw is the ability to combine Linux with the mainframe's proven reliability, speed and management tools to drive down the cost of running critical applications.

"We're not interested in just getting the least expensive thing on the market," says Randy Lengyel, senior vice president of MIS at Wisconsin Physicians Service Insurance Corp. (WPS), a health insurer in Madison, Wis. "We want something that is reliable, functional and has great customer service from the [vendor]."

Hitting the Sweet Spot

The sweet spot for mainframe Linux today is server consolidation — replacing dozens or even hundreds of separate Intel-based Linux or Windows servers with a partition on the mainframe that dedicates a single processor, memory and other system sources to running Linux.

WPS created a virtual Linux server running on one 250-MIPS processor that was available within an IBM eServer zSeries 900 mainframe and did it at 40% of the cost of ordering, installing and configuring a new Intel-based server, says Lengyel.

A virtual server can be created within two to three minutes and deliver as much as nine times the throughput of a stand-alone server, he says. WPS, a longtime mainframe user, was drawn to running Linux on the mainframe as a way to leverage the mainframe's reliability and to keep support costs low.



RANDY LENGYEL, senior vice president of MIS at Wisconsin Physicians Service Insurance, created a 250-MIPS virtual Linux server.

DAVID ORNDORF

MOVING INTO MAINFRAME LINUX

Running Linux on IBM big iron can deliver savings — but only with the right applications and upfront planning. **BY ROBERT L. SCHEIER**

Linux's Expanding Mainframe Role

Right now, the biggest use for mainframe Linux lies in consolidating infrastructure servers such as Web servers. But a few companies are already looking for new ways to use mainframe Linux to cut costs and increase efficiency.

Some are using application server environments such as WebSphere and WebLogic to run core business applications "in modern, Web-enabled or Web services environments," says Giga Information Group analyst Stacey Quandt.

Randy Lengyel, senior vice president of MIS at Wisconsin Physicians Service Insurance, says he hopes to do just that. If he could run his PeopleSoft financial applications on mainframe Linux, Lengyel says, he could easily create virtual servers when his accountants need them and switch that power to Web servers during peak enrollment periods for new members. Currently, he says, the

servers that keep the accountants happy during their crunch time sit nearly idle the rest of the year.

Dave Ennen, technical support manager at Winnebago Industries, says he hopes to save money by running mainframe backup software on Linux. By using IBM's HiperSockets to stage legacy data to Linux running on the mainframe before backing it up, he says, he could use lower-cost Linux backup tools.

Over the next 18 months, says Quandt, mainframe Linux will enter a third phase, where corporate IT will use it to run not only business applications but also databases that currently run on z/OS. This development would let IT shops use the lower-cost Linux environment to run complete application environments that used to be scattered across multiple, harder-to-manage servers.

— Robert L. Scheier

The instability of its Windows NT servers was one reason why recreational vehicle manufacturer Winnebago Industries Inc. implemented Dallas-based Bynari Inc.'s InsightServer groupware application for Linux on an IBM zSeries mainframe.

Dave Ennen, technical support manager at the Forest City, Iowa-based company, says he had to reboot his Windows NT servers once a week in an effort to improve their stability. But "on the mainframe, everything is geared to staying up 24 hours a day, seven days a week," he says.

Winnebago already had a mainframe (an IBM S/390 Multiprise 3000 Enterprise Server) and a staff skilled in IBM's z/VM, an operating system that can divide each partition in a mainframe into multiple software-based virtual machines, each running its own operating system and applications.

Rather than go through the expense of training his staff for the upgrade from Windows NT to Windows 2000 and Windows Exchange Server 2000, Ennen says it was more cost-effective to use part of his existing mainframe capacity and his staff's mainframe skills to run its Linux-based e-mail system. However, "if you were going to go out and buy a mainframe" just to run Linux, he says, "it's going to be a little hard to justify."

Many observers say users should be running at least 20 to 25 servers before

even considering consolidation into a mainframe Linux environment. Some of the best candidates for consolidation are infrastructure applications such as file and print services, e-mail, domain name servers and Web servers such as Apache.

But not every application is a natural for mainframe Linux. Windows applications are a poor choice, since they don't run on Linux, although Linux equivalents are available in many cases. And applications that have complex graphical user interfaces or that perform complicated data analysis can use so much processing power that it's

Action Items

CONSIDER CONSOLIDATING servers that run infrastructure applications like e-mail.

LOOK for a Linux distributor with enterprise-class support, such as SuSE or Red Hat.

CROSS-TRAIN the Unix and mainframe staffs.

MIGRATE applications to Linux on Intel-based hardware first, then go to mainframe Linux.

FACTOR IN the costs and effort involved in adopting new mainframe operating systems, such as z/OS or z/VM, that might be required to support Linux partitions.

more cost-effective to keep running them on stand-alone servers.

Users have also been reluctant to move complex applications such as SAP R/3, which can take years to implement on distributed servers, onto a new environment. Although SAP AG has been

among the first vendors to support Linux with its flagship products, Linux will represent only about 10% of new installs in 2003, says Manfred Stein, product manager for Linux Lab and Unix platforms at SAP.

Once you've identified applications to run on the mainframe, users and analysts recommend migrating them first to stand-alone servers running Linux. That's a good way to get support staff familiar with Linux before tackling the additional complexity of the mainframe, they say.

Training Unix veterans in mainframe Linux skills — or Linux veterans in Unix skills — can be one of the biggest challenges. Many organizations have one support organization for mainframes and another for Windows and Unix servers, says John Kogel, vice president of the systems and service management group at Candle Corporation of America in Des Moines, Iowa. These groups must work together and learn new terms for familiar concepts, he adds.

Since beginning its move to mainframe Linux in January 2002, WPS has cross-trained two mainframe and two Unix staffers in the combined Linux/mainframe environment. Each employee then took his knowledge back to his respective group.

Choosing the Products

The choice of Linux distribution for the mainframe matters, say users and analysts. Nuremberg, Germany-based SuSE Linux AG has the closest relationship with IBM, so about 80% of organizations running production applications on mainframe Linux use SuSE software, says Stacey Quandt, an analyst at Giga Information Group Inc.

WPS's Lengyel, for one, chose SuSE Linux. "We like to have one focal point of support, through IBM, to support z/VM as well as the Linux environment," he says.

But SuSE's dominance may not last, Quandt says, because Raleigh, N.C.-based Red Hat Inc. improved its mainframe support relationship with IBM in the second half of 2002.

The choice of mainframe operating

“We're not interested in just getting the least expensive thing on the market.”

RANDY LENGYEL, SENIOR VP OF MIS, WISCONSIN PHYSICIANS SERVICE INSURANCE CORP.

system also makes a big difference. Users can run Linux in native mode on IBM's older, 31-bit mainframe OS/390 operating system and can prioritize application access to resources within a partition. But IBM's latest mainframe operating system, z/OS,

supports higher-throughput 64-bit processing and lets IT managers prioritize applications across multiple partitions, says Peter McCaffrey, director of product marketing for zSeries mainframes at IBM.

Users who hope to consolidate hundreds of stand-alone servers on mainframe Linux should also plan to implement IBM's z/VM, recommends Quandt. Z/VM lets users create hundreds of virtual Linux machines within each partition. Without z/VM, users are limited to 15, one for each partition. And, says Ennen, with z/VM, you don't have to bring the mainframe down to create a new Linux partition. But z/VM has a steep learning curve.

Linux-Only Hardware

IBM also offers the Integrated Facility for Linux (IFL), a mainframe processor that runs only Linux under z/VM and costs as little as one-third as much as a similar processor used for general mainframe workloads, says Quandt. IFLs can run on IBM's Multiprise, eServer zSeries and S/390 Parallel Enterprise Servers.

Another advantage: Adding an IFL to a mainframe doesn't boost software licensing bills because IFLs aren't counted in capacity-based software pricing agreements, according to IBM.


For customers that don't have mainframes and might otherwise choose high-end Unix servers, Quandt points out that IBM offers a Linux-only z800 with three years of licensing and support at entry prices of less than \$400,000, making it a cost-effective alternative to high-end Unix servers.

Mainframe Linux isn't a good fit for every application or every user. But the more you suffer from server sprawl, users and analysts say, the more you should consider it. ▀

Scheier is a freelance writer based in Boston, Mass.

MAINFRAME LINUX RESOURCES

For more resources on mainframe Linux, see the resource links at:

 **QuickLink 35645**
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Winning through server consolidation. Winnebago Industries lives by its e-mail system. By consolidating its functions onto one IBM @server zSeries running Linux, the company created an industrial-strength e-mail system, and saved on software licensing fees in the process. For a complimentary guide on server consolidation, visit **ibm.com/eserver/winnebago**

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forms division. But now the scope of his work is much broader.

Mundie works with Chairman and Chief Software Architect Bill Gates on a comprehensive set of technical, business and policy strategies that spans Microsoft's entire product line. As senior vice president and chief technical officer of advanced strategies and policy, Mundie must coordinate the plans when their implementation crosses product groups.

Mundie's interest in technical and policy issues related to security and critical infrastructure has landed him on several government committees, including the National Security Telecommunications Advisory Committee. He also started and continues to sponsor Microsoft's Trustworthy Computing initiative.

Computerworld's Carol Sliwa interviewed Mundie about the Trustworthy Computing progress. Excerpts follow:

What effect did the companywide memo that Bill Gates issued in January 2002 have on the Trustworthy Computing initiative? That was sort of the final step in a companywide evangelism. At that point, it went from evangelizing the importance of this to the day-by-day practicing of the art of what you do about it. You have to train people. You have to assess where they are. You have to make it possible to measure these things.

How can we in the outside world tell how much progress Microsoft has made on Trustworthy Computing? Qualitatively, things like Bill's memo, observing the vast majority of people in the company acting as if they believe this was an important thing, is a qualitative way of deciding if we made progress.

In terms of the quantitative measurements, I think of them in two ways. There is, How do we keep score internally on whether or not we're really doing the right thing? What I said a year ago, and which we are working every month to do better, is to develop an internal measurement system where we're able to assess the progress that people have made, assess their level of understanding of the issues, provide training and then keep score of that as a way of creating management metrics that allow the manage-

Inside Trustworthy Computing

Microsoft's Craig Mundie sounds off on how the initiative is working within the company and for customers.

CRAIG MUNDIE

Title: Chief technical officer of advanced strategies and policy at Microsoft

Age: 53

Top accomplishments: Initiator and sponsor of Microsoft's Trustworthy Computing initiative; co-founder and former CEO of supercomputer maker Alliant Computer Systems Corp.

ment of the company to look in a holistic way at Microsoft and say, "Well, are all the groups getting it? Are they doing the right stuff?"

The ultimate outcome of this is, when you look at the products, do they exhibit better characteristics? And there, the anecdotal evidence which we begin to measure in a quantitative sense is certainly starting to support the claim that we will make a big difference here. If you look at Visual Studio .Net, which was the first product group to span down development in order to look at these particular security issues, one thing that's clearly ob-

servable is [that] we delayed the shipment of the product from Thanksgiving [2001] until February [2002] specifically because we made decisions to make changes. That costs real money, affects real programs and real people.

Right now, we're very pleased, because the number of security issues that have come up in that product since its release is de minimis.

What are some of the other areas where the effects of Microsoft's security review can be seen? [Internet Information Server] 6 was changed entirely in its installation configuration so that only the basic Web server, which is quite secure, is the thing that's standardly installed.

There have been other things people can observe in terms of the stand-down we did in Windows, where we stopped development this year for about 10 weeks. It produced a set of patches that we've started to push back out to the Windows update mechanism for some of the installed products. . . . We released some new tools, like the Microsoft Baseline Security Analyzer.

In some sense, the first of the real Windows products . . . where [trust] has had a lot of effect on the design will be the .Net Server release in the spring of [this] year, because . . . we have stopped and gone back and made more fundamental changes.

The other thing that we think is going to be telling will be, Which way are all the vulnerabilities, particularly critical vulnerabilities, trending in terms of the use of the systems? We feel these efforts are starting to pay off and that our numbers will trend down in terms of the absolute numbers of bugs that are identified and vulnerabilities that

are found and have to be fixed.

What is the greatest challenge going forward? In a technological sense, you're chasing a rocket ship. I mean, we continue to have the technology moving aggressively forward. We continue to scale up the capability of the systems. As they get bigger and bigger, complexity mounts, and to some extent, those things all work against the idea that, well, can we really get this thing stabilized and improved?

So to some extent, I always worry about the balance between having to make the product and the business go forward and trying to lock it all down. If things weren't moving, it would be a lot easier. But they have to keep moving, or there would be no business.

What has been your biggest disappointment in the area of Trustworthy Computing? We still end up with independent security research folks finding bugs that we don't find. . . . We wish we would get to the point where they're no better able to find things than we are.

When I think about the industry, one of the disappointments I had is that there's no observable evidence, to me at least, that any other significant companies have really chosen to focus on this to the degree that we have. Certainly, if you look at the Linux community or IBM and the people advocating all the open-source approaches, there's about as big a dichotomy as you can imagine between what they say about that stuff and what it actually means.

One of my big disappointments as it relates to that whole phenomenon is basically the blind adoption and reiteration of all the myths around these things: Just because it's open, it must be more secure. People think that Microsoft is a whole lot worse at these things from an engineering standpoint than that community. Well, no, I don't think so. You look at Windows with 50 million lines of code. You look at Linux at, I don't know, 5 million lines of code. You look at the whole number of deployments, or at least the total number of people that are doing the analysis and attack on these things, and if we come out even, we'd say we must be doing something right. But in fact, we don't find a lot more. In fact, now we're increasingly finding less. ▀

MORE ON TRUST

To read more of Craig Mundie's comments on Trustworthy Computing, the Palladium security features for Windows and the competition, visit our Web site:

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www.computerworld.com

Session Initiation Protocol

DEFINITION

Session Initiation Protocol is a signaling protocol for Internet conferencing, telephony, presence, events notification and instant messaging. The protocol initiates call setup, routing, authentication and other communication features to endpoints within an IP domain.

BY MATT HAMBLIN

SESSION INITIATION Protocol (SIP), with its promise of serving as a single global signaling standard, has mushroomed in importance for networking in the past year. But it may be years from adoption because of technical barriers still to be surmounted, including problems with device interoperability and concerns that SIP will make networks more vulnerable, experts say.

The idea behind SIP is to provide a simple, lightweight means for creating and ending connections for real-time interactive communications over IP networks — mainly for voice, but also for videoconferencing, chat, gaming or even application sharing.

Since the Internet Engineering Task Force launched SIP in 1999, hundreds of vendors have

started to sell SIP-enabled phones and proxy servers globally. In one significant move, Microsoft Corp. built support for SIP into the Windows XP operating system.

A typical corporate scenario using SIP for an IP phone call would go something like this:

Caller X needs to speak to caller Y. Each of their companies has a SIP proxy server. X

and Y can be using any of a variety of clients, including a PC software phone, or “soft-phone”; a SIP hardware phone; an analog phone with an adapter; or a SIP-enabled cell phone.

When it was turned on, X’s client automatically sent a register message to his company’s SIP proxy server, telling it to route calls to a specific IP address. X initiates a call to Y via a PC softphone by typing a text request that’s sent to her company’s SIP proxy server,

which uses the Domain Name System to look up Y’s domain. The invite request is forwarded to Y’s company’s SIP proxy server, which sees that X wants to call Y and forwards the invite request to Y’s IP address.

Y’s phone rings, or a screen pops up, and Y is asked if he wants to accept the call. His affirmative response, called a 200 OK, is sent to his company’s proxy server, which forwards it to X’s company’s SIP proxy server, which sends the 200 OK to X’s client.

An acknowledgment message, or ACK, is sent directly to Y’s client, and the communication begins.

SIP is designed to be a key component for integrated data and voice IP networks. For example, companies can run a cost-effective single wire to a desktop using IP (replacing the second line to a traditional phone) and have the PC operate as a softphone that enables a user to click on a name in a PC directory. The name is associated with a SIP URL, sending a message into a network cloud. Then, when a connection is established, the softphone user can communicate via a headset connected to the PC.

Industry Inroads

“SIP already has a tremendous stronghold in a multitude of areas,” says David Fraley, an analyst at Gartner Inc. in Stamford, Conn. “Lately, SIP is the protocol of choice for new 3G wireless networks and phones.”

Moreover, Cisco Systems Inc. and other manufacturers of IP public branch exchange (PBX) equipment are putting SIP into that hardware, while media gateway makers are adding it to network cores, Fraley says. Microsoft, Yahoo Inc. and America Online Inc. have made SIP a part of instant messaging sessions.

“What we’ll have in the future is a single signaling protocol across all IP networks, and 10 years out all networks are going to be IP,” Fraley predicts.

The principal intention, and

advantage, of SIP is, of course, having a common signal across a multitude of devices, Fraley says.

But Tim McCracken, business development manager at Cisco, points out that interoperability isn’t always as good as proposed. He says that for basic person-to-person calls, SIP works fine. However, beyond the basic connection and call waiting and call holding, there are hundreds of features, such as call transferring and call billing, that are being delayed due to interoperability problems.

Craig Cotton, a manager of product marketing at Cisco, says his company is “bullish” on SIP but questions whether it can evolve to deliver all the functionality enterprises want.

Cisco officials worry that SIP, written as a peer-to-peer protocol, could be inadequate for organizations that need a signaling protocol for client/server networks. But Fraley says SIP proxy servers can be created to overcome this problem.

At WorldCom Inc., SIP “has opened entire lines of business,” says Teresa Hastings, director of multimedia services engineering. In fact, the company is already working with Microsoft on a beta version of a Windows XP server supporting SIP, says Henry

Sinnreich, a distinguished member of engineering at WorldCom. The company in August launched a commercial IP telephony service called Connection that depends on SIP.

Despite such high hopes, there are concerns that SIP could pose network security problems as it becomes more universal. “If you have a single signaling technology running from telephones over the Internet into core networks and everywhere else, there’s a lot more room for malicious behavior,” says Fraley.

The peer-to-peer nature of SIP also raises related concerns about management and control in general, Cotton says.

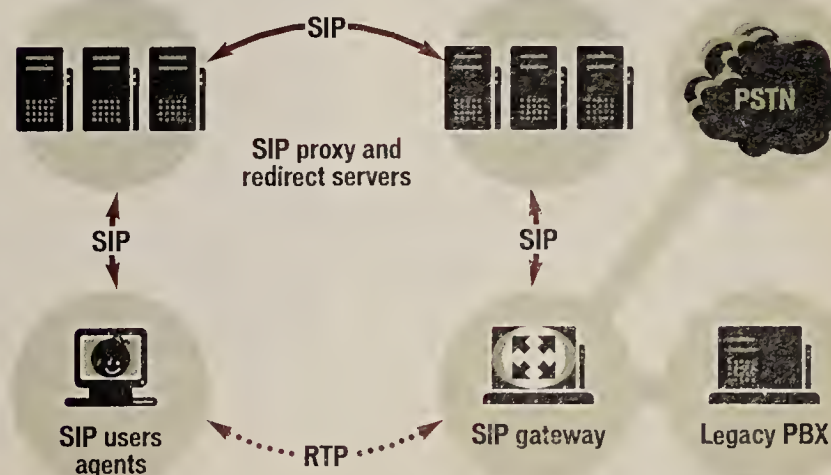
“With the traditional client/server, [the datacom manager] is in control and you know all the users, but with peer-to-peer, you have a lot of features on a device and you don’t go through a central repository,” says Cotton. “Eventually, with a SIP proxy server, we’ll get that control, but how long will it take in a pure SIP environment to get pure management and control and security?”

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SIP Architecture

The diagram below shows a SIP architecture for use in a corporate network. SIP standardizes information transfer between the clients of individual end users, between the SIP proxy and redirect servers and to a SIP gateway that also provides connectivity to the public switched telephone network and the company’s legacy PBX. The user clients are directly linked to the SIP gateway via RealTime Transfer Protocol.



Task-Centric Storage Takes the Stage

Outlook: New intelligent, inexpensive ATA-based storage appliances are solving application-specific problems – and may redefine the traditional role of the application server. By Robert L. Mitchell

NETWORK APPLIANCE INC.'S NearStore ushered in the era of using inexpensive, Advanced Technology Attached (ATA) disk arrays for disk-to-disk backup or secondary, near-line storage. The product, launched in March 2002, offers faster backup and recovery times at a cost per megabyte that's competitive with tape backup systems. Now vendors are rushing to add application-specific intelligence to ATA-based storage appliances that reduces application server workloads while offering more efficient ways to store and retrieve data.

Perhaps the best example is Centera, EMC Corp.'s system for indexing, storing and retrieving "fixed content" files. In Centera's Content Addressed Storage scheme, the client application bypasses the server's file system by making calls to a proprietary application programming interface (API). Centera

intercepts each file storage request, strips off the metadata (such as date and time stamps) and runs a hashing algorithm to create a unique, 27-character content ID. It then returns a content descriptor file (CDF) to the client application that points to both the stored object and its metadata. Thereafter, the application need only request the stored object's content ID. Abstracted from the storage media in this way, the application needn't worry about disk I/O, tracking the file path or keeping up with changes in the back-end storage configuration.

The bottom line: "You should need less of a server... and the applications should run more efficiently on lower-cost compute platforms," says Steve Duplessie, an analyst at Milford, Mass.-based Enterprise Storage Group.

Centera's technology also eliminates redundant file storage by creating multiple references that point to a single instance of the stored file. For exam-

ple, to store an archived e-mail file attachment sent to 1,000 users, Centera would create 1,000 CDF references to a single content ID, which in turn would reference a single, stored file.

Start-up Avamar Technologies Inc. takes this technology one step further to address the problem of backup inefficiencies. While Centera's CDF technology can eliminate storage of redundant files, Avamar's Axion backup appliance indexes the individual data blocks that make up those files on disk in order to eliminate both file and partial file redundancies. When a sentence changes in a document, for example, Axion updates only the affected blocks within that file.

"We're so much more efficient [that] we can store 10 to 100 times the amount of daily backups that you could on a [disk-to-disk backup system that is] mirroring tape backup," says Jed Yuch, Avamar's executive vice president. The result is a system that requires less space for backups, can restore faster and can efficiently back up distributed systems over a wide-area network, he says.

Another start-up, Netezza Corp., has taken the intelligent storage concept the furthest by embedding parallel processing power with individual disk drives. It designed the Netezza Performance Server as a "data appliance" that optimizes business intelligence queries against very large databases, replacing the traditional Oracle database running on high-end Unix servers and EMC storage arrays. CEO and co-founder Jit Saxena says disk I/O is a bottleneck when querying such databases. Netezza's parallel processing architecture packages what it calls Snippet Processing Units (SPU) with each

EMERGING TECHNOLOGIES

Tech Specs

EMC CORP.

- **Location:** Hopkinton, Mass.
- **Web:** www.emc.com
- **Product:** Centera; prices range from \$204,000 for 5TB of mirrored storage to \$408,000 for 10TB. Systems can be clustered for up to 150TB of capacity.
- **Release date:** April 2002

AVAMAR TECHNOLOGIES INC.

- **Location:** Irvine, Calif.
- **Web:** www.avamar.com
- **Product:** Axion backup appliance; prices start at \$170,000 for up to 3.5TB of mirrored storage.
- **Release date:** October 2002

NETEZZA CORP.

- **Location:** Framingham, Mass.
- **Web:** www.netezza.com
- **Product:** Netezza Performance Server; prices range from \$622,000 for a 4.5TB system to \$2.5 million for an 18TB model.
- **Release date:** September 2002

RAIN Explained

Under the hood, both Centera and Axion storage appliances use what are called Redundant Arrays of Independent Nodes (RAIN) to achieve redundancy and improved reliability. Both systems consist of independently functioning storage nodes that fit inside a standard 19-in. cabinet. Each node includes one or more disk drives, a CPU, memory, and Ethernet connections that serve as the communications backplane within the box. Like network-attached storage devices, each node runs its own operating system. (Centera runs a variant of Linux it calls CentraStar.)

RAIN is an implementation of RAID across nodes, rather than disk arrays. Centera uses RAIN for disk mirroring. Axion supports "RAIN-5," a node-level implementation of RAID 5, which requires fewer redundant drives.

The RAIN architecture also enables scaling. In Centera, for example, up to 16 individual racks can be clustered for up to 150TB of mirrored storage, and up to seven clusters can be arranged into a "domain" to support up to 1.05 petabytes of data.

— Robert L. Mitchell

disk drive — up to 450 per appliance — and integrates those with a symmetric multiprocessing front end that can accept SQL queries from any application that supports the Open Database Connectivity protocol. Each SPU has dedicated memory and communicates over a Gigabit Ethernet connection.

"We have deployed huge amounts of intelligence right next to each drive," says Saxena. By keeping all drives processing in parallel, he says, "we provide 10 to 20 times the performance of a [traditional] system at half to one-third the cost." And because the system is read-intensive and application-specific, Saxena says ATA-based drives work well.

By using smart, inexpensive ATA-based storage appliances that offload I/O processing for application-specific tasks, vendors may eventually change how users view the traditional server's role, says Duplessie.

"What we're doing is taking distributed computing to the next level by 'appliance-izing' the intelligence in the server," he says. But even big-name products like Centera are still in early stages of acceptance. "It will take some time for people to make the best use of this," predicts Jamie Gruener, an analyst at The Yankee Group in Boston. ▀

Centera Turns State's Evidence

The Southern California High Tech Task Force in Norwalk, Calif., became an early adopter of EMC's Centera, using it to archive forensic evidence gathered from suspects' computers. Prior to using the system, investigators burned evidence onto CD-ROMs — as many as 100 for a 60GB drive image. "We needed something that was secure, very reliable," says project director Rick Craig. Centera's design supported mirroring and provided an audit trail, since stored objects can't be changed without generating a new content ID. "Centera was almost a custom fit," says Craig.

Using custom-developed software, investigators now store captured evidence on a Linux server cluster with 6TB of direct-attached storage. Completed cases migrate to the

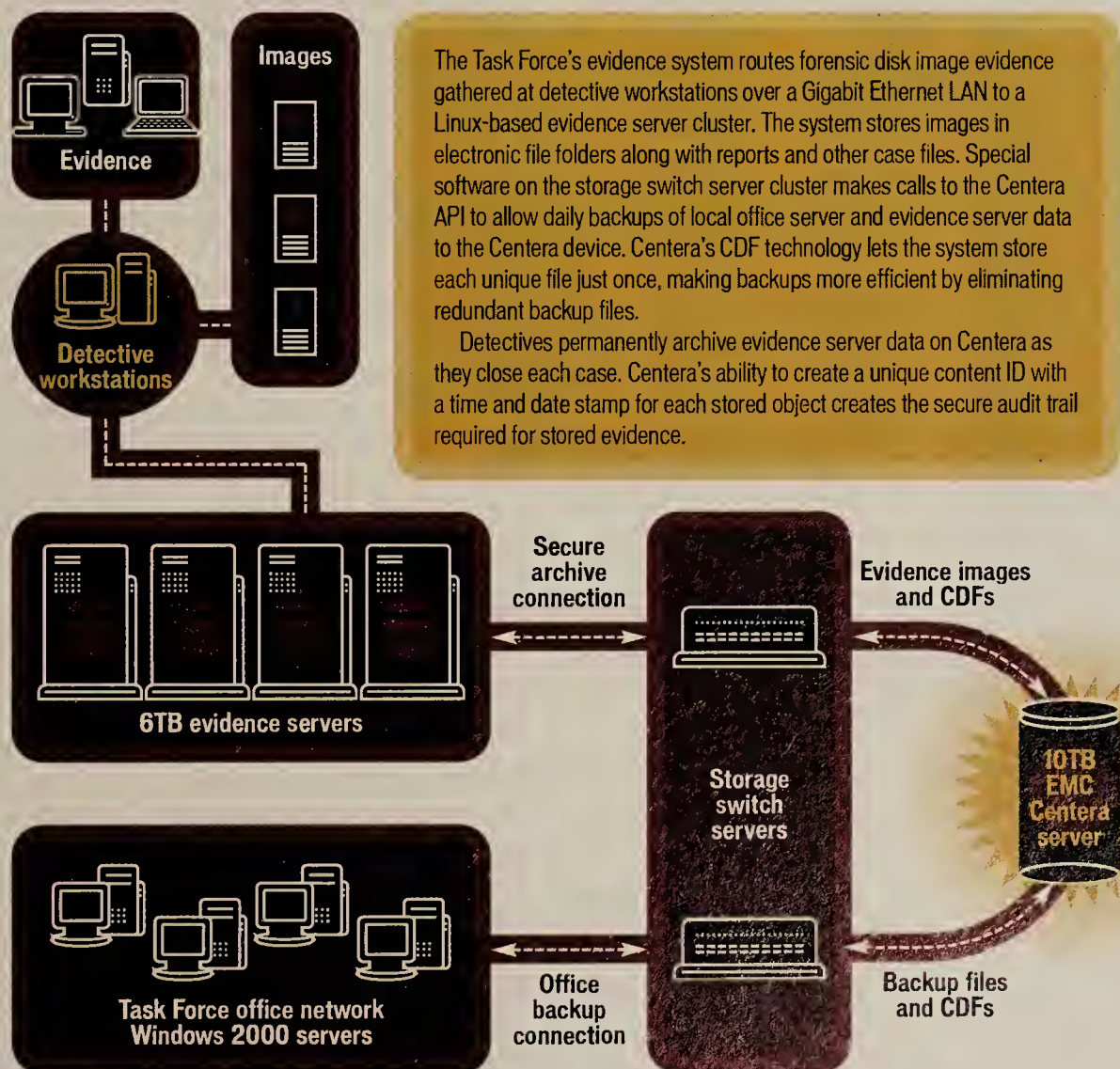
Centera archive before users erase them from the active storage area. Craig says Centera was priced right. "Our sheriff's department has a Symmetrix system that cost a million bucks, and that's 1TB. We're at a quarter of that for 10TB. It's a day-and-night comparison," he says. But the system has another benefit: Craig uses it to back up files on both the evidence network and Windows 2000 servers in the Task Force's offices. Backups run quickly and with minimum space because Centera saves only one copy of redundant files and updates only those files that have changed. "With the amount of archiving we do, we'll see the overall savings in about a year and a half," he says.

— Robert L. Mitchell

CASE STUDY

Southern California High Tech Task Force

HIGH-SECURITY EVIDENCE AND BACKUP SYSTEM



The Task Force's evidence system routes forensic disk image evidence gathered at detective workstations over a Gigabit Ethernet LAN to a Linux-based evidence server cluster. The system stores images in electronic file folders along with reports and other case files. Special software on the storage switch server cluster makes calls to the Centera API to allow daily backups of local office server and evidence server data to the Centera device. Centera's CDF technology lets the system store each unique file just once, making backups more efficient by eliminating redundant backup files.

Detectives permanently archive evidence server data on Centera as they close each case. Centera's ability to create a unique content ID with a time and date stamp for each stored object creates the secure audit trail required for stored evidence.

Missing PKI Root Key Causes a Panic Attack

A potentially compromised root key threatens to undermine the entire corporate public-key infrastructure. By Vince Tuesday

MY COMPANY has a formal process to deal with staffers who are leaving our company. It helps us close accounts quickly and deal with complicated situations like firings. We don't want someone to find out from our team that he's lost his job, rather than from human resources or his manager. So we must follow a complicated series of steps. Recently, we had a misstep.

In our process, the PC support group disables network and e-mail accounts, other teams disallow access to the appropriate accounts on their systems, and finance ceases mobile phone and remote-access service and recovers hardware from the employees.

I'd always felt we were doing well at balancing the need to act quickly with the need to protect the feelings and confidentiality of departing employees. Then I was called and told that someone who had left a month ago, let's call him "Nick," had logged into a critical server and that important files were missing.

A junior staff member, whom I'll call "Bob," had taken over Nick's work and couldn't find the test root key when he tried to issue test private keys for our customers. While searching on the server that held these files, he discovered that someone had logged in using Nick's account and deleted it.

In a public-key infrastructure (PKI), everything boils down to the root key. If you have the root key, you can issue

your own keys for any part of the system and pretend to be whomever you like. Without our root key, we could issue no new keys and would have to rebuild our PKI from scratch — a daunting prospect.

Alarming Activity

At first, I wasn't too worried, since this was just the test system. I had Bob disconnect the

machine from the network and give me the IP address the connections were coming from. I then asked the network team to trace it. The address fell

within a range we allocate for remote access, and it could have come only from Nick's house. It turns out that Nick's Windows account had been properly closed, but the telephone company hadn't shut down his line, and his Unix account was still active.

Even more alarming were the initial reports from the analysis of the disconnected machine. Unix stores a history of previous commands users

have run, and it showed that Nick's account had conducted a vast cleanup operation. The contents of directory after directory had been listed and then deleted.

This could be a sign of normal tidying up — or of a not-very-skilled malicious user. Unix writes the history file to disk when you disconnect. If you want to get rid of it, you have to connect again, delete the history and leave once more. Otherwise, like Nick, you leave the entire set of commands issued in the session. With the full history, we could see he had visited the directories with the keys in them but hadn't copied or opened any of the files before deleting them.

The root key was safe, because Nick hadn't looked at the contents. But could it be recovered so that new test keys could be issued? Or would we have to make a new one and reissue the entire test environment trust infrastructure?

Normally, we would use a disk utility to recover the files, but with so many files deleted at the same time, tracking down the ones we needed wouldn't be easy. Then Bob pointed out that the important files, including the root key, had been copied to a Windows NT shared drive.

Share Scare

Meanwhile, I made an angry call to the telephone company and chased down the heads of the systems operations group, which quickly plugged the holes and corrected the process. It seemed that Nick had merely meant to clear up his files and free up disk space. No harm had been done. Or had it?

Bob connected to the NT share, one of our company-wide temporary file-sharing spaces that's open to all users.

He navigated to the directory used by his team, then went to the section for the test keys, in a folder called Test. But what was the folder next to it, called Live?

My heart missed a beat. The keys to our live system are produced under total care and close supervision, processed on machines not connected to external networks and carefully encrypted whenever they are transferred to backups.

I pictured the result of them lying around on a wide-open NT share available to thousands of staffers. We would have to shut down our key systems, investigate all access to confirm it was legitimate and notify all users. The humiliation and ridicule from our customers and competitors would be huge. "Live?" I asked in a nervous tone.

"Don't worry," Bob said. "Someone just added the directory to keep the structure consistent with all our others. We always have a Live and Test. Look, it's empty — always has been."

I checked the backup logs to confirm that Bob was correct before letting out a long sigh of relief. By concentrating all the trust and security of the system into a few small files, PKI does limit what you have to protect and makes it easier to focus your efforts. But PKI's root key also makes it easier for things to go horribly wrong, as my experience shows. ▀

WHAT DO YOU THINK?

This week's journal is written by a real security manager, "Vince Tuesday," whose name and employer have been disguised for obvious reasons. Contact him at vince.tuesday@hushmail.com, or join the discussion in our forum:

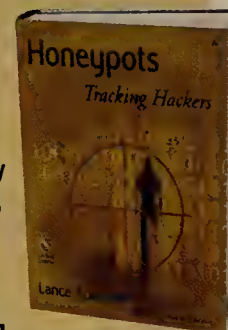
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SECURITY LOG

Security Bookshelf

Honeypots: Tracking Hackers, by Lance Spitzner, Addison-Wesley Professional, 2002.



Lance Spitzner, a guiding light in the Honeynet Project, has produced a masterful summary of the current state of the art for "honeypots" — security systems whose value lies in their being probed, attacked or compromised. By distracting hackers from real targets and capturing their tactics, honeypots help make networks more secure.

Spitzner takes the reader on a tour of the history of honeypots, reviews the six major commercial and freeware products and outlines the steps involved in setting up a honeypot. He also includes a chapter covering the current legal status of this approach to security.

The book includes an extensive CD-ROM with background reading and many of the software tools Spitzner discusses.

The writing style is a bit stilted and repetitive, but as a resource on honeypots, this book is a must-have.

— Vince Tuesday

A Better Browser

Antivirus software intercepts and scans e-mail file attachments at the point of entry, but files downloaded using a browser aren't scanned until after they're saved.

Secure IE, an Internet Explorer add-on from Boston-based Winferno Software, blocks access to those files until they've been scanned. It also makes defining security zones easier and can block ActiveX, Flash and pop-up windows. Pricing starts at \$29.95 per seat; volume pricing of \$15 to \$20 per seat is available.

**SECURITY
MANAGER'S
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Without our root key, we could issue no new keys and would have to rebuild our PKI from scratch — a daunting prospect.

BUSINESS TRIVIA QUESTION

Number 41

_____ is the company
that 400,000 businesses rely on
for e-commerce.

- ☐ (a) VeriSign
- ☐ (b) VeriSign
- ☐ (c) VeriSign
- ☐ (d) VeriSign

We're also the company that enables 7 billion network connections every day. VeriSign has spent the last seven years building a secure infrastructure for the Internet. We'd like to do the same for your business. VeriSign can help you deploy a trusted infrastructure so you can conduct secure communications and transactions. Soon you'll know why 475 of the Fortune 500 use VeriSign.

*Learn all you need to know about infrastructure security – and how VeriSign's managed network and security solutions can help you – by downloading our new white paper: **Cyber Security in the Age of Action**. Visit www.verisign.com/security*



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BRIEFS

Media Exchange Appliance Debuts

Zultys Technologies in Sunnyvale, Calif., last week announced the MX1200, a media exchange appliance for integrating voice over IP, data, video and fax with one software interface. It runs on the Linux operating system using standard protocols such as the Session Initiation Protocol, Voice XML and the Telephony Application Programming Interface.

The MX1200 scales from 25 to 1,200 users, and prices range from \$20,000 to \$212,000, depending on the number of users.

Microsoft Updates MOM 2000

Microsoft Corp. has announced enhancements to its Microsoft Operations Manager (MOM) 2000 software, which helps companies manage Windows environments. The enhancements include about 30 management pack updates with application-specific information for common Microsoft server scenarios; Service Pack 1 with globalization capabilities; and support for clustering the MOM database, a MOM Resource Kit to help users improve efficiency and an updated software development kit.

Compuware Offers Vantage 8.5

Compuware Corp. in Farmington Hills, Mich., released an instant reporting upgrade to its Vantage application performance management line. Version 8.5 will include a Web-based user interface to manage an entire enterprise from a single console, allowing views into clients, servers and network nodes and links.

The new reporting tool allows IT staff to combine in-depth system-performance data with information about the end user's experience and then immediately publish an integrated report that can be distributed via e-mail or to other Web sites. Pricing for Vantage 8.5 starts at \$19,000.

ROBERT L. MITCHELL

Just Pin It on Microsoft

MICROSOFT HAS BECOME the company that the computer industry loves to hate. It's downright fashionable these days to blame everything on the "convicted monopolist." But that attitude also serves as a convenient vendor smoke screen that

distracts the industry from more important issues — such as building good products, listening to the customer and developing new technologies.

Is Microsoft truly responsible for everyone's failures in this industry? To listen to its competitors, one might think so.

Vendors that can't compete have always needed someone to blame, someone to sue. Why not Microsoft? What other reason could explain why competitors' "technically superior" products fail to catch on? How about this: Many vendors are so cocksure that they know what's best for corporate IT that they fail to listen to what IT managers really want. Instead, they try to force-feed managers technologies they don't need. Microsoft has no monopoly on arrogance.

If there's one thing Microsoft is good at, though, it's listening to the customer. In fact, one could argue that the problems technologists hated most in Windows 9x — poor security and a lack of reliability — are a direct result of listening too closely to end users, who were demanding ease of use and ever more features. With its stated reliability and security initiatives, Microsoft now has a laser focus on the needs of corporate IT, and the ship is slowly turning. The lawyers are ready.

Few companies have been vilified to the extent that Microsoft has. Even cigarette maker Philip Morris (now



ROBERT L. MITCHELL IS Computerworld's technology evaluations editor. Contact him at robert_mitchell@computerworld.com.

Altria Group Inc.) gets more respect these days. In online forums, a subculture of hate has arisen where Microsoft has been accused of everything short of building weapons of mass destruction. And those who view alternative technologies as a personal religion see Microsoft as a threat to their very existence. The Great Satan must be toppled.

Far removed from these arguments sit most corporate IT managers, who don't care about intrigue. They want products that make good business sense. Products like Microsoft's Exchange, SQL Server and Systems Management Server aren't gaining ground in corporate America because they're being forced on IT. They're getting in because they have features IT has been requesting.

And the idea that Microsoft's products are inferior is bunk. If you don't believe that, ask a corporate programmer who has worked with Visual Studio .Net and the .Net Framework. Or an Exchange 2000 administrator. Or early users of Windows Server 2003.

In most cases, Microsoft has consistently churned out technically solid products. Are they category leaders? Often not. Do they have weaknesses? You bet. But in corporate IT, where slow and steady is the name of the game, a good-enough product with enterprise-class support will do just fine. It's well known that Microsoft can

spend huge sums to establish itself in a new business. It's true that the company leverages its hegemony in desktop and departmental server software to gain footholds in new markets. But its dominance beyond software is overrated. Microsoft ranked 72nd on the Fortune 500 list last year. Its revenue, at \$28 billion, is about one-third that of IBM, which is just as aggressive and customer-focused — and is pushing a Linux strategy that actively competes against the Windows franchise.

Microsoft isn't invulnerable. It's still protecting a proprietary Windows architecture in a world that increasingly demands open systems. Key businesses outside of Windows and Microsoft Office, from MSN and Xbox to cell phones and set-top boxes, lost money to the tune of \$1 billion last year. And with the market for its Windows franchise maturing, Microsoft tacitly acknowledged that it's unlikely to grow as it once did by declaring a modest shareholder dividend in January — an event that rocked the industry.

This is the Evil Empire that's responsible for all of our problems? I don't see it. Yes, Microsoft can be a ruthless competitor. Yes, the government declared that the company abused its monopoly power in the operating systems market and used that advantage to drive competitors out of key markets. But the biggest complainers aren't the small guys who got squashed by the Microsoft elephant. It's the other big boys in the herd who often bang the drums hardest. Those vendors should take responsibility for their own competitive missteps and keep the focus on the customer, where it belongs. ▀

DO YOU AGREE?

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QUOTE OF THE WEEK

“Too often people think they have to create Fort Knox. If you’re in the nuclear power business, you’re right at the top. But if you’re in baked goods, nobody’s looking to knock off the Keebler elf.”

— Jay M. Williams, senior vice president and chief technology officer at The Concoors Group. Page 37

STEAL THIS IDEA

Getting the Right Person At the Right Time

Dow Chemical reduced its hiring cycle time across 900 offices in 65 countries by consolidating its efforts through an application service provider. Page 40



Perk Watch: BMWs Are Out, Bowling Is In

Companies are doing their best to keep IT talent. A wonderful boss, good career growth opportunities and the prospect of fun are key to luring pros for the long term, says Cognos CIO Rob Collins (left). Page 38



When Judith Franklin was charged with dramatically improving customer service in Minnesota's Driver and Vehicle Services division, she emphasized delivering functionality fast.

SARA JORDE

WHEN Yanking THE Mainframe ISN'T AN OPTION

Minnesota's solution may have been cheap and inelegant, but it works just fine. By Connie Winkler

WHEN EX-WRESTLER GOV. Jesse Ventura promised to shape up Minnesota's government, the state's Driver and Vehicle Services (DVS) division was taking as long as four months to renew a driver's license or issue car registrations and license plates. Complaining was useless because the 30-person call center couldn't answer the 1.5 million calls it received annually. The system was a joke.

"Courts would tell citizens to call DVS to find out when their driver's license was reinstated, for example, and citizens would just laugh because they knew it was impossible to get through on the phones," recalls Judith Franklin, manager of enterprise technology support for DVS and the person charged with untangling the mess.

Or, more dangerously, police would stop drivers on the roads and have no way of knowing for sure whether a license was suspended or had been reinstated as motorists claimed.

As part of the totally paper-based system, various forms for licenses and registrations piled up at DVS in St. Paul and across an assortment of third-party companies that the state contracts to process DVS paperwork. Consequently, the information was keyed by about 30 data entry workers into an archaic, 1970s vintage mainframe database sys-

tem known as Supra from Cincom Systems Inc. in Cincinnati. To generate and decipher reports from the data, DVS users needed dot-matrix printers, Cobol programmers and highlighter pens. The system was a mess.

That was three years ago. Today, citizens receive renewed driver's licenses in three to seven days by applying either via the Internet or at one of the hundreds of third-party driver's license contractor sites, the majority of which are connected via a sister Web system.

In the courts, 1,200 judges get immediate access to driving records, and police are beginning to download driver's license photos to car computers to aid in their work. Back in St. Paul, DVS operations and budgets are being revamped, and, as a result, the more than two-dozen data entry workers — many of whom were hired 20 to 30 years ago — are now asking what their new jobs are going to be. According to DVS, they're being reassigned to other jobs at a savings to DVS of about \$72,000 a month.

But getting here wasn't easy.

Under New Management

"Our new management is very much into managing us as a business," says Franklin. "We needed to have a technology infrastructure that supported the business practices we wanted to change."

DVS chose Verastream Host Integrator software from Seattle-based software vendor WRQ Inc. and commodity servers running a Microsoft SQL Server database as a cost-effective solution. This intermediary server-based tier

uses component technology to extract the valuable business-logic nuggets from the old code residing on the mainframe and to link the new Web-enabled front end to the green screens and IBM S/390 back end, which is still running under CICS in the state's Department of Administration (see diagram, next page).

As so many state governments now face huge budget shortfalls, this front-

Continued on page 36

CASE STUDY

WHEN Yanking THE Mainframe ISN'T AN OPTION

Continued from page 35

end approach is "fairly common because there are so many state back-end systems that require a complete overhaul," says Thom Rubel, program director for IT at the National Governors Association in Washington. "Most states are trying to do it this way because redesigning everything is too expensive. They're trying to create open architectures so they can create systems that don't require wholesale change on the back end."

A bonus for states is that adding self-service capabilities frees up employees for other jobs. "There are efficiencies to be gained, and many states are trying to identify still-manual processes that don't need to be there," says Rubel. "States don't always get rid of people, but they redeploy them to functions they haven't been able to do for lack of people funding."

Avoiding Back-End Overhauls

For Franklin, who was brought in to give DVS its own computing capability, make the agency more accountable and dramatically improve customer service, redesigning the mainframe system wasn't an option.

"I've talked with other states which dropped such projects after two years because they bit off too much in wanting to change the whole back end," she says. "They spent multiple millions of dollars, but after several years, they dropped the project. . . . Everyone had lost interest because there was no deliverable." Ultimately, Franklin adds, DVS wants a new back-end database, but that's a long-term project.

For now, Franklin emphasizes delivering functionality fast. "You have to go ahead and make some moves. You can't wait until you've designed everything — the business will have changed in the two years it took you to redo everything," she says.

Because the Supra system was a closed, proprietary product with little application documentation, there was

no way to hook in application programming interfaces or other connections used by current technologies. "If it had been IBM's DB2 or Oracle's database, there would have been all sorts of tools we could use," she explains. The other issue: Franklin had only three programmers, none of whom had worked with Web systems or databases before.

Franklin turned to WRQ, with which she had worked in the past, to connect sundry desktop systems to mainframes. Verastream was installed in September 2001, and by November the small team had the driver's license renewal process online. The initial Verastream software and server hardware cost about \$25,000, but the system is now up to five servers, representing an investment of about \$100,000.

Many systems designers today may find such a solution inelegant. But it reflects the wider reality that employees, partners and customers want access to information on demand. They don't want to wait months or years to get the capability. Yet, existing legacy systems weren't designed for such flexibility, and IT budgets are tight. That leaves many IT managers trapped between legacy systems and the "expectations of the Web generation," notes WRQ President Shaun Wolfe.

Another big plus for DVS is that Verastream's component technology allowed DVS to reuse chunks of code containing the business logic for a specific application, such as computing the tax on a car based on its age.

"I didn't want to rewrite all that; if it's already written, why can't I reuse it and Web-enable it?" says Franklin, who in previous jobs re-engineered mainframe-based systems for 3M Co., the Carlson School of Management at the University of Minnesota, and St. Paul's schools.

Verastream also includes data auditing tools, which enable DVS to collect, store and manage new information from the Web transactions. Also, because Verastream uses models to build applications, those models can be reused as needed. Internal users appreciate that new applications are turned around in one to two months and that they perform consistently, Franklin says.

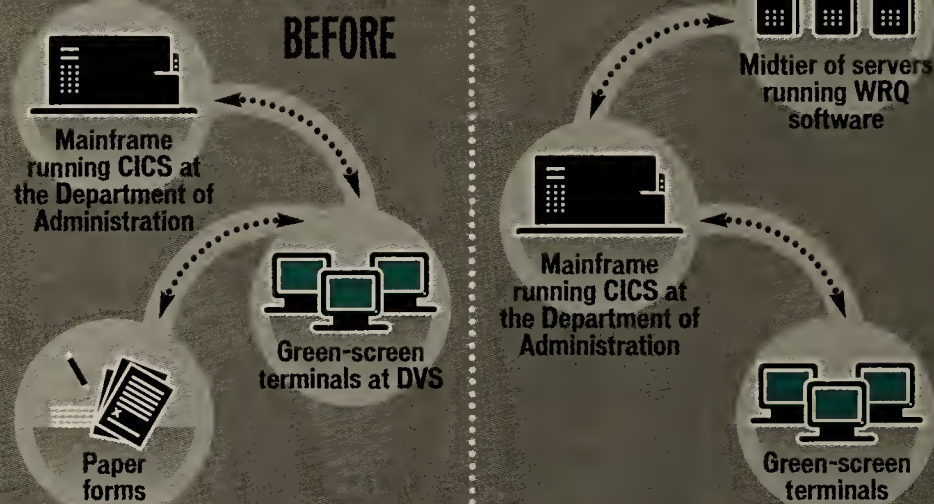
Improved Access

Currently at www.mndriveinfo.org, citizens can renew their licenses or plate registrations, change their addresses, check car tax information and ascertain their driver's license status.

At www.dps.state.mn.us/esupport, the state's hundreds of judicial and law

Fast Functionality on the Cheap

To make data and logic housed in its legacy central mainframe application available to Web-based users, Minnesota's Department of Vehicle Services deployed an intermediary server-based computing tier. It's here that WRQ's component technology is used to extract valuable business logic nuggets from old code on the mainframe and link them to new Web-enabled front-end systems. Also, green-screen terminals can still tap into the mainframe system. Total cost: about \$100,000.



enforcement agents and business partners, such as car dealers and private license-processing businesses, can get password access to conduct their business. Courts and the police can read and update driver's license records. The business partners can renew or duplicate driver's licenses, schedule driver exams and renew registrations. Some pilot sites are even issuing duplicate titles. These private agents now conduct more than 50% of vehicle renewals and 10% of driver's license renewals online.

At these third-party business sites, distributing the data entry via the Web to where the citizen is submitting the application dramatically improves accuracy. If the eye exam is missing from the application, the processing stops, rather than the error being caught three weeks later in St. Paul. Such errors would require that the third party chase down the citizen for a re-exam, which is just one of the horror stories from the previous process, Franklin reports.

Indeed, reworking the DVS systems to serve citizens has shaken out many rat's nests and inequities. Currently, private companies are able to buy the state's DVS information — at no profit to the state — and resell it back to the citizens. Now, says Franklin, "our goal is to distribute the information to the citizens whose information it is," even-

tually eliminating the middleman companies that now sell it back to citizens for a fee.

In 2002, Ventura didn't seek reelection as governor, but the accountability gauntlet he threw down to state agencies remains. His successor, Republican Tim Pawlenty, has already asked the DVS, "How are you going to integrate this with the rest of the state?" Franklin is talking with Minnesota's Department of Finance and the Bureau of Criminal Apprehension.

Minnesota's experience is mirrored across the nation. States have been the last holdouts for the hierarchical mainframe-based systems of the 1960s and 1970s, says the National Governors Association's Rubel. That situation has endured because of constitutional and statutory requirements, but the organization's best-practices group is seeing a surge in new systems-migration strategies.

"States are ideally headed toward the practice of 'capture the data once and use it many times,' so that citizens and businesses aren't constantly re-entering data," says Rubel. "But you can still find some strange things out there." ▀

Winkler, a former New York bureau chief for Computerworld, writes about technology management from Seattle. Contact her at winklerconnie@yahoo.com.

How to Do an IT Security Audit

Understanding your business will focus your efforts. By Kathleen Melymuka

IF YOU'RE THE IT MANAGER at a small to midsize business, it's only a matter of time until you're asked to do an IT security audit. Even in a larger company, if security is decentralized, you may be the go-to guy in IT. You're neither a security expert nor an auditor, and resources are tight. How will you begin and where will you go from there?

■ **First, don't panic.** "People sell themselves short," says Jay M. Williams, senior vice president and chief technology officer at The Concours Group, an IT consulting firm in Kingwood, Texas. "For the most part, security is common sense."

■ **Join a security research organization** such as the Information Security Forum, says RA Vernon, chief security officer at Reuters America Inc. in New York. "You'll find a group of individuals willing to talk about security issues, share experiences and add some value to any process you may try to implement," he says. They can direct you to software, methodologies and other resources to help you tackle the job.

■ **Consult with your business executives** to be sure you understand which aspects of your business are most vulnerable to security threats.

■ **Consider your industry.** "Too often people think they have to create Fort Knox," Williams says, but in reality, few companies have extremely tight data security requirements. "If you're in the nuclear power business, you're right at the top," he says. "But if you're in baked goods, nobody's looking to knock off the Keebler elf."

■ **Manage executive expectations.** "An IT audit program will not happen overnight," says David Hoelzer, director of Global Information Assurance Certification and manager of the Advanced Systems Audit track of the SANS Institute, a cooperative security research and education organization in Bethesda, Md. Depending on the size of the organization, it will take at least several weeks, he says. "Prepare management for the work that will be required of them to assist you," he adds, because they'll need to help correct any faulty policies and practices that are uncovered.

■ **Map it out.** Work with technology and business analysts to draw a high-level schematic of the vulnerable intersections of technology and business, Vernon suggests.

Consider security tools. There is software that can scan your network and produce a list of areas of exposure.

There are also tested methodologies such as OCTAVE from the CERT Coordination Center at Carnegie Mellon University in Pittsburgh that help you build a security program to industry standards. Your colleagues in the security group can help you find the most useful tools for your company's needs. "They take the best practices and roll them up into a product that the IT manager can plug in," Vernon says. "It may not be all you need, but it will be a far cry from where you currently are."

But don't go tool-happy. "To secure every server and app is not going to have any ROI," says Rick Allen, principal at E-Security Assurance Services in Santa Rosa, Calif. "The level of control has to equal the level of risk. You don't want to put a \$500 security tool on an asset worth \$50."

■ **Prioritize.** "All vulnerabilities are not created equal," says Larry Rogers, senior member of the technical staff at CERT. "Some fixes are worth the time spent, and some are not." Identify critical information assets by figuring out which could put the company out of business if they were compromised or damaged, says Hoelzer.

■ **Focus on internal controls.** "A Fort Knox firewall in front of your server

won't help if someone can still impact that information due to lack of internal controls," says Allen. The five basic internal security controls are authorization, identification of users and systems, authentication, integrity (including backups, checks and balances on data) and monitoring.

■ **Check that you have reasonable security policies and procedures in place,** says Barbara Buechner, formerly senior manager for information security at Merck-Medco Managed Care LLC in Franklin Lakes, N.J., and now on the staff at the Technology Managers Forum in New York. Then make sure that your company's reality matches what you have on paper.

■ **Write it up.** "Address the areas that have been acknowledged as vulnerabilities and put together some documentation as to how you're going to mitigate," Vernon says. Include all the key issues and costs associated with mitigation. "Some vulnerabilities may be accepted by the business because mitigation is too costly," he says. "That's a business decision."

■ **Stay real.** A focused 25-page report with clear action items will accomplish much more than a 1,000-page report that will exhaust everyone's commitment and end up on a shelf, Allen says.


■ **Consider a pro.** For companies with complex security needs, such as a legal obligation to protect customer or patient privacy, it probably makes sense to contract an IT security firm. "Many items that would be obvious to a security professional may be overlooked by a day-to-day administrator," says Tom Watson, project lead for information security at Bayer Corp. Pharmaceutical Division in West Haven, Conn. An outside firm can perform the audit, establish compliance guidelines and help to create security documentation or simply validate that you did your risk assessment correctly and haven't missed anything.

Remember that security is a complex and continuing challenge, and periodic audits are a must. "It's never the end of the story," Vernon says. "Security is an ongoing saga." ▀

Melymuka is a Computerworld contributing writer. Contact her at kmelymuka@earthlink.net.

ASKING THE RIGHT QUESTIONS

Go to our Web site for a detailed questionnaire that experts use to assess internal security controls:

 **QuickLink 35763**
www.computerworld.com

More this issue: Read more about security in this week's Security Manager's Journal on page 32.

IT Security Resources

CERT Coordination Center
www.cert.org

■ A center of Internet security expertise at the Software Engineering Institute, a federally funded research and development center operated by Carnegie Mellon University. Information and training on protecting your system, reacting to current problems

and predicting future problems.

SANS Institute
www.sans.org

■ Research, education and training on IT security issues.

Center for Internet Security
www.cisecurity.org

■ Methods and tools to improve, measure,

monitor and compare the security status of Internet-connected systems and appliances.

Internet Security Alliance
www.isalliance.org

■ A forum for sharing information on security issues.

Information Security Forum
www.securityforum.org

■ An international corporate membership organization whose members share information about security issues.

Perk Watch: BMW's Are Out, Bowling Is In

Companies are doing their best to keep IT talent. *By Barbara DePompa*

A ROSE FINALLY DID IT.

Competing IT services firms in Michigan had been doing everything they could to move in on The Epitex Group Inc.'s growing IT services business. Underbidding on IT staffing contracts. Wining and dining corporate accounts. Even making plays for the company's IT talent.

So when Holly Maguire, manager of employee relations and "maestro of corporate harmony," discovered that every one of Southfield, Mich.-based Epitex's programmers and consultants had been presented a single rose and offered a free lunch by a competing IT services recruiter, she was forced to act.

After making several phone calls to the competing firms' management — in effect, telling them to cease and desist — Maguire met several rose recipients for lunch to chat about their jobs and future prospects at Epitex.

The lesson: It's critical to stay in touch and keep key IT talent happy.

Maguire acknowledges that belt-tightening has made it tough to find new ways to keep personnel content without breaking the bank. "We've never offered enormous monetary bonuses, but we do try hard to keep our IT professionals happy," she says. The company uses fairly inexpensive employee appreciation initiatives.

Other businesses are working harder to keep communication lines open, delivering straight talk about corporate performance to help IT employees understand, first, how well or poorly the company is performing and, second, the impact of their contributions on the business.

For example, Cognos Inc., a business intelligence software company in Ottawa, recently staged a few in-house events during which a marketing executive spoke to the IT department to describe how recent networking and software improvements had radically improved productivity for marketing executives in Australia.

Another senior executive talked about how an upcoming upgrade of Cognos' database to Oracle will dramatically improve shipping and distribution processes within the company.

The reason for the communication? After months of bad news about layoffs and other economic declines, "we wanted our employees to know we understand they are working hard, and we appreciate their efforts," says Rob Collins, CIO at Cognos.

The significantly scaled-down bonuses, perks and incentives that budget-strapped companies have to offer these days are keeping IT workers on board — for now. At Epitex, for

instance, an account representative visits each IT consultant once a month to talk about work or air grievances. The corporate newsletter lists employees recognized by peers for outstanding work.

An "award patrol" delivers special plaques and balloons to those who have earned praise on the job. The company hosts an employee appreciation month featuring events like office-wide pizza lunches and family bowling nights once a week for four weeks. And IT staffers receive gifts for staying with the company, such as a leather portfolio after three years and a watch at 10 years.

In addition, while some companies have cut benefits such as matching 401(k) contributions, Epitex actually added that benefit this year.

Now the company boasts a 98% project completion rate — which means IT staff assigned to specific projects either complete those projects or are hired by the client again 98% of the time — a statistic that Epitex says is unrivaled in the IT services industry.

Keeping IT talent on board is no longer solely about stock options and designer coffees. It's important to provide work/life balance, say analysts and recruiters. And it's "even more critical to connect an IT professional's job to specific business goals to improve your chances of retaining top IT talent," says Phyllis Klees, a partner at Deloitte & Touche LLP's Human Capital Advisory Services practice in San Jose.

At Cognos, the onus is on management to make IT personnel understand the importance of their contributions on the job, Collins says. And that's not always easy to do. The lesson is that "the length of an IT professional's stay at any company is most affected by



COGNOS' Rob Collins eschews a "culture of secrecy."

whether he or she has a wonderful boss, good career growth opportunities and whether he or she is having fun," Collins says.

He says many companies fail to retain employees "because they think when times are tough, we better shut up." But he says that behavior is completely wrong. "If you hide information from employees, hideous things like Enron can emerge. A culture of secrecy is not in anyone's best interest," Collins says.

Meanwhile, recruiters, human resources executives and CIOs say that although more IT professionals are available for hire, finding workers with the right skill sets to meet the increasingly rigorous demands set by corporations is difficult. "There's more talent to choose from, but it's still challenging to find those with the experience and skills to meet our corporate clients' growing list of requirements," Maguire says.

Analysts and recruiters also say some companies have taken advantage of the skills glut to vigorously upgrade their IT workforces — in many cases, they're firing IT workers and hiring lower-cost but more-skilled people to replace them. And some who are still holding on to their jobs say having a job right now is compensation enough.

But CIOs and other recruiting experts worry that after months of layoffs and corporate belt-tightening, there will likely be much turnover as the need for IT talent rises, creating a talent shortage all over again.

The Information Technology Association of America (ITAA) in December reported that U.S. companies hired 359,000 IT workers between October and December 2002 and dismissed 211,000 IT employees, for a net gain of 148,000 workers. The total number of U.S. IT workers stood at 10.1 million last month, compared with 9.9 million in January 2002, according to the ITAA.

The bottom line: "Most IT professionals are tired of hearing continuing news about layoffs at companies like General Electric and Motorola," says Maria Schaffer, an analyst at Stamford, Conn.-based Meta Group Inc. "If companies continue to operate purely in a cost-cutting mode, as soon as the economic situation improves, the best performers will leave." ▀

DePompa is a freelance writer and editor in Germantown, Md. Contact her at bdepompa@comcast.net.

U.S. IT Employment

Between October and December 2002:

HIRED IT WORKERS

359,000

LAID-OFF IT WORKERS

211,000

■ Net job gain: 148,000

Total number of U.S. IT workers:

JANUARY 2002

9.9M

JANUARY 2003

10.1M

SOURCE: INFORMATION TECHNOLOGY ASSOCIATION OF AMERICA, DECEMBER 2002



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Getting the Right Person At the Right Time

BY JULIA KING

DOW CHEMICAL CO. was used to receiving literally thousands of résumés — via postal mail and e-mail — which would pile up and go ignored until a hiring manager was presented with a job requisition for a chemist, database specialist, manufacturing manager or maybe a plant operator. Manually sifting through the résumés to find the people with the right skills for the job could take weeks or even months. Add to that another several weeks to contact the appropriate applicants, set up and conduct interviews, and review notes from those interviews, and a full financial quarter could pass before a new employee was actually hired and working at the company back in early 2001.

Today, Dow's hiring cycle time is down from an average of 95 days to 30 to 35 days. Its headhunter and other recruiting costs are down 25%, and it has cut its job advertising costs by 35%.

STEAL THIS IDEA

This is primarily the result of implementing an automated résumé-tracking and worker-profile system hosted by RecruitSoft Inc., a San Francisco-based application service provider. The system has paid for itself within nine months of deployment and has earned a 6-to-1 return on investment over the past two years, according to Jon Walker, Dow's human resources global director.

How It Works

All job applications and résumés generated by newspaper advertisements, Internet job boards and recruiter referrals are directed to Dow's corporate Web site, where they are immediately funneled into the RecruitSoft system. Dow hiring managers who tap into the system's central repository can immediately review résumés. They can also create templates to ask applicants very specific questions in order to validate their experience and expertise.

For example, for a European sales job opening, a template might include questions about the applicant's passport status, ability to travel and language skills.

"The faster you can talk to [applicants], the more you can share your goals and culture, and the faster you can make a match," says Walker. "We're a science and technology company, not just a chemical company, so we're trying to hire the same technology people as Intel or finance people as Merrill Lynch." Even in a down economy, speed is critical to acquiring the best and the brightest talent, he notes.

Even more useful is the system's central repository, which now contains thousands of résumés against which Dow hiring managers can quickly compare incoming job requisitions.

Walker tells the story of a young woman who was rejected for an auditor's job in the office of the comptroller. Later, a financial analyst position opened up in the company's finance department. "But before they even

When you hire someone before you even post the job, it reduces your cycle time immensely.

JON WALKER, HUMAN RESOURCES
GLOBAL DIRECTOR, DOW CHEMICAL CO.



advertised the job, this woman's profile popped up against the requisition, and they hired her on the spot. When you hire someone before you even post the job, it reduces your cycle time immensely," Walker says.

"Before, when we had paper résumés, we had no centralized way to do any kind of consistent workflow," he says. "Now the deal is we have a system that doesn't sleep."

The Web-based RecruitSoft system also allows Walker to create future employee supply-and-demand scenarios by analyzing the experiences, skills and competencies contained in worker profiles stored in the central repository. "We're now able to track the right people," he says.

Looking ahead, Walker says he foresees Dow exchanging applicant profile information with other companies, excluding Dow's direct competitors.

"Why not do this, especially if the company is a customer of ours?" he asks. "We could go from 100,000 profiles to 1 million profiles to create a talent pool and a network that works better for everyone." ▀

■ **WHO:** Jon Walker, human resources global director, Dow Chemical Co., Midland, Mich.

■ **PROBLEM:** Receiving lots of résumés, complete with all the trendy IT and business buzzwords, but not having a consistent, cost-efficient or effective way to quickly and accurately assess job seekers' true abilities or their potential for success at the company.

Dow, a \$28 billion company with more than 900 sites in 65 countries, is organized into eight global business units, none of which had the ability to archive and track résumés. This meant that a hiring manager in one business unit had

no way of knowing about a qualified job seeker who may have applied to the company through a different business unit.

■ **SOLUTION:** Dow implemented a central electronic repository into which all incoming résumés from around the world — including those posted from third-party, Web-based job boards — are directly funneled. Skills profiles are created for all applicants and are automatically checked for a match each time a new job requisition is entered into the system. An application service provider was hired to install and then manage the technology on a day-to-day basis.

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NEWSMAKER



ALEX ZOGHLIN, chief technology officer at Orbitz LLC, will leave the company in April but plans to stay on as a consultant. Zoghlin recruited his own team of developers and has positioned the

travel reservations company with what he estimates is a 40% cost savings from its Linux platform. As a result, Orbitz is able to offer consumers an easy-to-use online booking tool with a wide range of travel choices. He spoke with *Computerworld's* Jean Consilvio about some of his other accomplishments at Orbitz.

Compared with an average of less than 24 months, three years as CTO is a long time. What made you stay? I had some specific personal goals; I wanted to be part of developing the best software development team. There are key ingredients to starting [and building] the best companies, and one of them is people. . . . I wanted to be part of a team that was going to grow through one of those spurts.

How did you recruit your software team? Great developers want to work with great developers. . . . Our recruitment process is very painful. About one out of 100 applicants [is hired, and we have 50 to 60 developers now]. . . . I started with a few great core developers and then told them they needed to hire people better than themselves. No matter where I look, I see people greater and better than those that hired them on. . . . That excellence in people is not just in our software team, it's also the CEO, CFO and HR staff. They're great people that took a long time to hire because of the skill set, drive, desire, execution, operational history [we look for]. I leave the company in great hands.

How do you see yourself as a leader? I see myself standing on the shoulders of giants, mostly because of my hiring style, hiring people better than me and then getting out of the way. . . . I spend a lot of time making sure bureaucracy doesn't get in the way of efficiency. And the end result is I end up looking really good, because I let the people I hire do their jobs.

JOHN BERRY

ROI or Your Money Back

THIS YEAR, we might witness the injection of a powerful new dose of value into value-based contracting. As vendors continue to build their sales efforts around an ROI narrative — and some will — their customers are likely to be concerned about the profit impact of IT investments, not just how long it takes the vendor to return a help desk call.

At least a few companies are already infusing their IT investment decision-making with financial models to forecast expected returns. At the same time, more than a few vendors have begun to build their sales pitches

around the ROI story. The emergence of these parallel agendas suggests that we will see more value-based contracting in the future. Deals will be struck in such a way as to reflect the customer's keen desire to link some percentage of the IT vendor's compensation to measurable financial outcomes. Should this forecast hold, the implications for the vendor/customer relationship will be profound.

These kinds of contractual arrangements aren't entirely new. In the broadest sense, value-based contracting means that some of a vendor's compensation is at risk and dependent upon a customer achieving certain financially driven results from the IT investment. The ability to shift some of the cost burden and risks of an IT investment has been a powerful tool that customer companies have used to design contracts for IT services, hardware and software. Under one value-based approach known as gain-sharing, vendor and buyer share in the quantifiable dollars

saved or generated from the user's IT project. In a shared risk/reward arrangement, the buyer and vendor share in the cost of the development of the project and in the subsequent spoils.

Likewise, service-level agreements (SLA) have been constructed to ensure that predefined performance goals, such as system uptime and availability or tech support turnaround times, are met. If these guarantees aren't

met, the vendor reimburses the end user or pays a penalty.

Now, how about a value-based contract with an SLA guaranteeing market share percentage increases, faster inventory turns, reductions in procurement errors or increases in sales per rep? The logic is simple: If vendors are determined to sell their products and services based on a metric-driven economic value message, then customers will expect them to earn part of their compensation based on these performance indicators.

Is the day coming when the company CFO cuts a check for a technology purchase only after the investment reaches some threshold ROI or beats the expected payback period?

If so, vendors are facing a more demanding marketplace in which the financial returns they peddle in their sales and marketing efforts become the foundation of rigorous financially driven SLAs. This puts their compensation at risk.

The implications of this arrangement are equally profound for the customer. Metrics built into such SLAs will oblige the buyer to treat the vendor as a true business partner, perhaps for the first time.

The prospective customer will be required to share sensitive business process data, its cost structures and perhaps its road map for future product or service innovation. Many companies shopping for IT resist sharing cost data, let alone the value drivers moving the organization. Given the kind of strategic, consultative role the vendor will inevitably find itself in as it negotiates the sales contract, there's no avoiding the fact that buyer and seller will need to slow-dance through the process, not bang heads in the mosh pit, as uncomfortable as that dance might be.

How can this new value-based relationship flourish otherwise? If the prospect seeks an arrangement in which it pays for IT based upon ROI results but then refuses to reveal the unique levers that drive its profitability, how can an equitable contract be drafted? Vendors would likely feel as if the wool was being pulled over their eyes. ▀



JOHN BERRY is an IT management consultant and analyst in Bend, Ore. He's currently writing a book about the measurement of intangible assets. Contact him at vision@according2jb.com.

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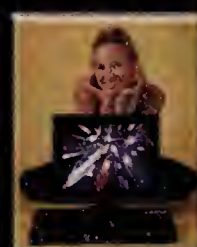
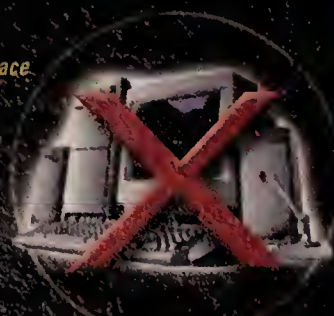
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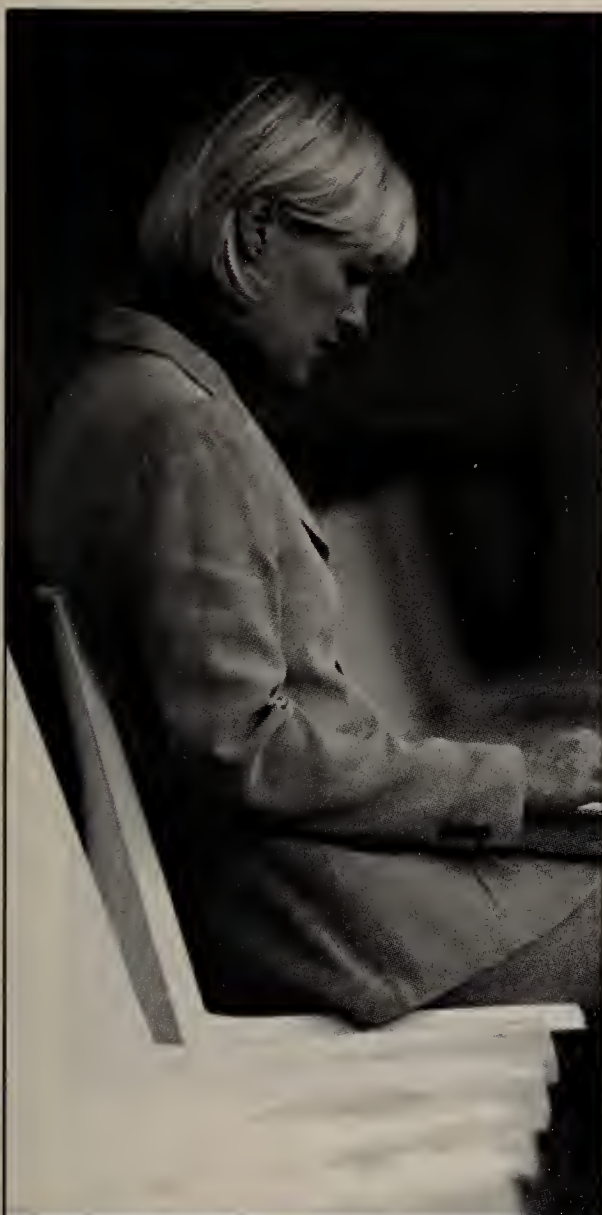
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Page number refers to page on which story begins. Company names can also be searched at www.computerworld.com.

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ADVANCED MICRO DEVICES INC. 6
AEDIF COMM BV 49
AEX LLC 7
ALCAN INC. 8
ALLIANT COMPUTER SYSTEMS CORP. 28
ALTRIA GROUP INC. 34
AMERICA ONLINE INC. 29
APPLE COMPUTER INC. 8
ARIZONA STATE UNIVERSITY 21
AT ROAO INC. 7
AVAMAR TECHNOLOGIES INC. 30
BANK OF AMERICA CORP. 20
BAYER CORP. PHARMACEUTICAL DIVISION 37
BEARINGPOINT INC. 16
BINARYTREE INC. 49
BRIGIT IDEAS SOFTWARE INC. 49
BRITANNIA AIRWAYS LTD. 8
BROOKSWICK BOAT GROUP 49
BT GROUP PLC 6
BTXACT TECHNOLOGIES 8
BUREAU OF LABOR STATISTICS 7
BUTTERFLY NET INC. 6
BYNARD INC. 23
CANADIAN IMPERIAL BANK OF COMMERCE 20
CASCADIA CORPORATION OF AMERICA 23
CHARLOTTE-MILLION UNIVERSITY CENTER FOR INTERNET SECURITY 14, 37
CHICAGO INNOVATION CENTER 37, 50
CHICAGO INNOVATION 8
CHICAGO SYSTEMS INC. 35
CISCO SYSTEMS INC. 8, 29
COGNOS INC. 38
COMPUTER ASSOCIATES INTERNATIONAL INC. 16
COMPUTER SCIENCES CORP. 12
COMPUWARE CORP. 34
CSX CORP. 16
DATAQUEST INC. 7
DATASYNAPSE INC. 6
DATAVANTAGE CORP. 1
DEFENSE INTELLIGENCE AGENCY 12
DELOITTE & TOUCHE LLP 6, 38
DELPHI CORP. 8
DOW CHEMICAL CO. 40
DUKE ENERGY CORP. 49
DYS ANALYTICS INC. 49
EBY-BROWN CO. 1
ELECTRONIC DATA SYSTEMS CORP. 20, 49
ELECTRONIC FREEDOM FOUNDATION 1
EMC CORP. 10, 30, 31
ENRON CORP. 38
ENTERPRISE STORAGE GROUP 10, 30
E-SECURITY ASSURANCE SERVICES 37
EUROPEAN UNION 8
FBI 12
FENWICK & WEST LLP 1
FIRST USA INC. 1
FOOTE PARTNERS LLC 10
FORRESTER RESEARCH INC. 20
FROST & SULLIVAN INC. 6
GARTNER INC. 16, 20, 29
GENERAL ELECTRIC CO. 38
GENERAL MOTORS CORP. 49

GIGA INFORMATION GROUP INC. 1, 23, 24
GILIAN TECHNOLOGIES INC. 8
GUARDENT INC. 8
HARRIS CORP. 8
HENKEL CORP. 49
HEWLETT-PACKARD CO. 1, 8, 20
HITACHI DATA SYSTEMS CORP. 10
I2 TECHNOLOGIES INC. 6
I2 USER GROUP 6
IBM 6, 7, 8, 10, 14, 20, 23, 24, 34, 35
IDC 7
INFORMATION SECURITY FORUM 37
INFORMATION SECURITY SYSTEMS INC. 1
INFORMATION TECHNOLOGY ASSOCIATION OF AMERICA 7, 38
INGERSOLL-RAND CO. 49
INSTITUTE FOR INFORMATION INFRASTRUCTURE PROTECTION 6
INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS INC. 7
INTEL CORP. 23
INTERNATIONAL IMAGING TECHNOLOGY COUNCIL 1
INTERNET ENGINEERING TASK FORCE 29
INTERNET SECURITY ALLIANCE 37, 50
IRON MOUNTAIN INC. 10
J.P. MORGAN CHASE BANK 12, 20
KEYCORP. 1
KVS INC. 10
LEXMARK INTERNATIONAL INC. 1
LOS ANGELES COUNTY HIGH TECH TASK FORCE 31
LOTUS SOFTWARE GROUP 49
MARY KAY INC. 1
MERCK-MEDCO MANAGED CARE LLC 37
MERRILL LYNCH & CO. 10
META GROUP INC. 8, 38
METROPOLITAN HEALTH 1

MICROSOFT CORP. 1, 8, 10, 14, 28, 29, 34, 35, 49
MOTOROLA INC. 38
NATIONAL GOVERNORS ASSOCIATION 35
NATIONAL IMAGERY AND MAPPING AGENCY 12
NATIONAL SECURITY AGENCY 14
NETEZZA CORP. 30
NETWORK ASSOCIATES INC. 20, 30
NEXT GENERATION SECURITY SOFTWARE LTD. 50
NEXTWAVE TELECOM INC. 14
NORTEL NETWORKS LTD. 8
ORACLE CORP. 30, 35
ORBITZ LLC 42
OSHKOSH B'GOSH INC. 1
PEOPLESOFT INC. 24
PHILIP MORRIS INTERNATIONAL INC. 34
PKWARE INC. 49
PLATFORM COMPUTING INC. 6
POPKIN SOFTWARE & SYSTEMS INC. 8
PRESIDENT'S CRITICAL INFRASTRUCTURE PROTECTION BOARD 12
RECRUITSOFT INC. 40
RED HAT INC. 23
REUTERS AMERICA INC. 37
SANFORD C. BERNSTEIN & CO. 10
SANS INSTITUTE 14, 37
SAP AG 8, 14, 23
SIEBEL SYSTEMS INC. 14
SOFTWARE ENGINEERING INSTITUTE 37
SQLSECURITY.COM 1
STATIC CONTROL COMPONENTS INC. 1
STORAGE NETWORKING INDUSTRY ASSOCIATION 10
SUMMIT STRATEGIES INC. 1
SUN MICROSYSTEMS INC. 6, 8
SUSE LINUX AG 23

SYBASE INC. 14
SYMBOL TECHNOLOGIES INC. 7
TAYLOR MADE GOLF CO. 7
TECHNOLOGY MANAGERS FORUM 37
TESSY PLASTICS LLC 12
TEXAS INSTRUMENTS INC. 6
THE CLARK COMPANIES, NORTH AMERICA 6
THE CONCOURS GROUP 37
THE EPITEC GROUP INC. 38
THE ORGANIZATION FOR THE RIGHTS OF AMERICAN WORKERS 7
THE YANKEE GROUP 8, 30
TRANSMETA CORP. 32
U.S. DEPARTMENT OF COMMERCE 12
U.S. DEPARTMENT OF DEFENSE 8
U.S. DEPARTMENT OF HOMELAND SECURITY 12
U.S. IMMIGRATION AND NATURALIZATION SERVICE 7
U.S. SECURITIES AND EXCHANGE COMMISSION 6, 10
UNIVERSITY OF MINNESOTA 35
UNIVERSITY OF TEXAS 1
W3 INTERNATIONAL MEDIA LTD. 1
WACHOVIA CORP. 1, 14
WINFERNO SOFTWARE 32
WINNEBAGO INDUSTRIES INC. 23, 24
WISCONSIN PHYSICIANS SERVICE INSURANCE CORP. 23, 24
WORLD COM INC. 29
WRQ INC. 35
YAHOO INC. 29
ZULTYS TECHNOLOGIES 34

ADVERTISER'S INDEX

Attachmate 22
www.attachmate.com
Borland 2-3
www.borland.com
Cisco 13
www.cisco.com
Computer Associates 4
www.ca.com
Cybernet Manufacturing 44
www.cybernetman.com
Dell 43
www.dell.com
Fujitsu 51
www.fujitsu.com
IBM db2 52
www.ibm.com
IBM eServer 25, 26-27
www.ibm.com
Microsoft 18-19
www.microsoft.com
New Moon Systems 11
www.newmoon.com
NTT Communications 17
www.ntt.com
SAP 39
www.sap.com
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www.sas.com
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www.sungard.com
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Continued from page 1

NT Server 4.0

which is due out in April, and to consider the possibility of skipping the Windows 2000 Server release entirely.

Jon Dell'Antonia, vice president of IT at OshKosh B'Gosh Inc. in Oshkosh, Wis., said the support extension may allow him to push into 2005 the migration of roughly 150 Windows NT servers that sit in the back rooms of stores.

So far, support hasn't been a worry for Dell'Antonia because the vendor for his company's point-of-sale systems, Datavantage Corp. in Cleveland, pledged to support Windows NT if Microsoft didn't.

For many companies in the midst of migrations, the extension isn't expected to have a significant impact on plans.

Financial services firm KeyCorp in Cleveland has migrated roughly 450 Windows NT servers to Windows 2000 Server and already has a strategy to move its remaining 1,350 NT boxes to Windows 2000. Ann Louis, vice president of enterprise technology operations, said KeyCorp will continue on its planned conversion path.

'A Little Leeway'

A technical architect at a large insurance company said the IT department had set a "hard date" to be off Windows NT Server by year's end, and the support extension merely provides "a little leeway."

"I doubt we'll change the date, but it's nice to have the margin," he said.

Although Microsoft's decision to tack on an additional year of support for Windows NT Server was generally lauded by users and analysts, the extension doesn't cover all of the company's support options. Pay-per-incident and security "hot fixes" will be available through Dec. 31, 2004, but the company will no longer

provide nonsecurity hot fixes to premier support holders after Dec. 31, 2003.

A hot fix is a modification to commercially available Microsoft product code to address a specific problem. As of Jan. 1, 2004, any customer wanting a nonsecurity hot fix will have to obtain a custom contract, according to a Microsoft spokesperson.

Bob O'Brien, a group product manager in the Windows server division, said the year-end elimination of nonsecurity hot fixes was "a customer satisfaction and business decision, given we are continuing to see an increase in Windows 2000 deployments coupled with a decrease in NT 4 re-

NT Server 4.0 Support Phaseout

The following support options will no longer be available as of the dates indicated:

Jan. 1, 2004: Nonsecurity hot fixes

Jan. 1, 2005: Pay-per-incident and premier support; online support

quests for fixes." He added, "The trend toward migration and consolidation is a better area to focus resources."

How much of an impact the elimination of nonsecurity hot fixes will have remains to be seen. Microsoft acknowledged

that corporate users typically request them.

Louis said KeyCorp has requested hot fixes related to Dynamic Host Configuration Protocol and Domain Name System over the past 36 months, and the company will weigh the potential risks that would be corrected with nonsecurity hot fixes and decide what support it will need going forward.

Dwight Davis, an analyst at Boston-based Summit Strategies Inc., criticized Microsoft's decision to fragment the NT Server support extension. He said it could confuse customers and "diminish the glowing aftereffect" that Microsoft hoped to gain from the other-

wise positive changes.

The changes will affect many companies. Tom Bittman, an analyst at Gartner Inc. in Stamford, Conn., estimated that 50% to 70% of the Windows server operating system installed base is still NT 4.0.

O'Brien claimed that only 35% to 40% of the Windows server installed base is NT 4.0. He said extending key support provisions was common sense "if you want to have a relationship with these customers for the next seven to 10 years."

Rob Enderle, an analyst at Giga Information Group Inc., said he thinks Microsoft also has seen customers turn to Linux, based on feedback his firm is getting from clients. ▀

Niche Vendors Catch Users' Eyes at Lotusphere

They fill gaps in Notes, Domino functionality

BY TODD R. WEISS
ORLANDO

Among the 5,000 attendees from around the world at last week's IBM Lotusphere 2003 conference were IT leaders from companies on separate but similar missions: to find out how to make their Lotus Notes and Domino systems meet their specific needs.

And often, the answers came not from IBM, but from niche companies that build add-ons for Notes and Domino.

James Greene, senior Lotus Notes infrastructure analyst at Duke Energy Corp. in Charlotte, N.C., was looking to solve the problem of e-mail eating up storage space. One possible solution was PKZip Professional Edition 6.0, featuring integration with Notes.

The product, from PKWare Inc., compresses and encrypts attachments [QuickLink 35865]. It would reduce Duke

Energy's e-mail storage needs and add security for the 25,000 Notes users and 5,000 Microsoft Exchange users Greene supports. "It seems that maybe using the attachment feature [to compress the file size], encrypting it and then sending it out may be the solution," Greene said.

Michael Bulis, program manager for industrial manufacturer Ingersoll-Rand Co. in Woodcliff, N.J., wanted knowledge management improvements for Notes and Domino and was looking at List Server for Domino 3.x products from Bright Ideas Software Inc. in Edison, N.J. The software would let him streamline how users send e-mail to multiple recipients.

Currently, some users send broadcast e-mails that devour costly bandwidth. Bulis would like to set up listservs, which would reduce storage and message distribution needs. The changes, which Bulis wants to implement during the next five years, will affect about 25,000 users worldwide.

Notes-worthy

Vendors that provide add-ons for Lotus software include:

DYS ANALYTICS: Improved administration and management applications

BINARYTREE: Notes and Domino migration and consolidation tools

BRIGHT IDEAS SOFTWARE: Listserv management tools

TEAMWORK SOLUTIONS: Workflow add-ons

"Some of this is vaporware," he said. "But generally, half of vaporware makes it to reality."

Nicholas Behrmann, global messaging manager at General Motors Corp., was investigating administration and management tools for Notes and Domino to help reduce costs and improve service.

Part of his mission was to look over tools that could be used by GM's IT outsourcer, Electronic Data Systems Corp. "I'd rather have them purchase a tool set, rather than reinvent the wheel," Behrmann said. Among the products he checked out was Netherlands-based AedifiComm BV's WorkplaceControl for Notes.


Perry Hiltz, Lotus administrator at chemical company Henkel Corp. in Gulph Mills, Pa., wants to consolidate domains for Notes to reduce the complexity of his systems. One possible solution: the Common Migration Tool for Notes Domains package from BinaryTree Inc. in New York.

"This basically does everything we've been doing in a manual way," Hiltz said. He said it would let him conduct migration processes from his desk, without having to travel. It would cost \$50,000 to deploy, but its long-term savings would result in a payback.

Joe Sise, Notes administrator for the Brunswick Boat Group in Knoxville, Tenn., was looking at Notes management tools from DYS Analytics Inc. in Wellesley, Mass., and researching spam fixes for his 3,500 users. Spam is "an increasing problem," he said. "We've tried to filter it. . . . But it's like sand in your hand. You get some of it, but most of it falls through." ▀

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FRANK HAYES ■ FRANKLY SPEAKING

Bug Chase Bungle

MAYBE YOU MISSED THIS NEWS last week amid all the hubbub about the Slammer worm: Security researcher Next Generation Security Software Ltd. (NGS) said it will stop sharing information with the CERT Coordination Center, the government-funded clearinghouse that tracks viruses, worms and other security problems [QuickLink a2860]. So what? Well, when NGS finds a security hole, it will notify its clients and the software vendor, but not CERT. Which sounds pretty selfish of NGS — until you consider whom CERT was passing the information along to.

That would be some of NGS's competitors and potential clients. And they've typically been getting the information *before* CERT notifies the public about a security problem.

Here's how it works: When a bug chaser like NGS finds a security problem, the company warns its clients (who pay for the service) and the vendor involved (who has to fix it). Then the bug chaser tells CERT, so CERT can confirm the problem and prepare its own alert. The public isn't usually told for 45 days, so the vendor has time to develop a patch.

At least that's how it's supposed to work. But since April 2001, CERT has also made vulnerability reports immediately available to the Internet Security Alliance, a CERT-sponsored group whose member companies pay dues ranging from \$3,000 to \$70,000 per year. None of that money goes to the bug chasers; it all goes to CERT.

While that fact isn't a secret, it wasn't widely known. At least the people at NGS didn't know that when they gave away their best stuff to CERT, CERT was selling it on the side. No wonder NGS wasn't happy when it finally realized what was going on.

The upshot? CERT loses early access to a major bug chaser's work. Now CERT will find out about NGS's research when NGS issues an advisory, like the rest of us.

And IT people lose confidence in CERT as the clearinghouse for the most up-to-date, comprehensive IT security information.

But it gets worse. It turns out other bug chasers already knew what NGS just found out. They've been withholding *their* security research from CERT, too. They just haven't made a big deal about it.

So, at a time when worms, viruses and other threats are rising, CERT's usefulness as a source for security information is collapsing.

And in exchange for this loss in credibility, what does CERT get? A few million dollars.

I prefer full disclosure of security holes, so IT shops can make their own best security decisions. But I also understand that security researchers have to make a living by selling what they've worked hard to discover. They can't afford to give it away to their competition.

Which means IT shops now face a choice. We can become clients of one or more security research outfits, if we really need that level of security information. Or we can make do with the bulletins coming from individual security companies and patches issued by vendors. But we can no longer assume CERT is the place to go for the best information.

CERT has a choice, too. CERT can keep passing along vulnerability reports to the Internet Security Alliance — guaranteeing that CERT won't get most information from bug chasers.

Or CERT can restore its credibility by killing that program and finding another way to get the few million dollars it currently generates.

Maybe the money could come from the government's new homeland security budget. That would be a cheap way of making America's IT infrastructure safer.

Or maybe it could be donated, no strings attached, by some high-tech billionaire — say, a chief software architect who feels directly responsible for the kinds of security messes that CERT should be helping to clean up. It would be good PR, and at a few million a year, dirt cheap.

Bill wouldn't even miss it. ▀



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Unclear on the Concept

When will the new spam filters be working? software development chief asks IT VP pilot fish. "I just logged onto my Hotmail account, and it's still clogged with spam." Fish gently points out that the filters work only on the company's own mail servers, not a personal Hotmail account. "Well, I know," sputters red-faced software chief. "But I accessed it from here at work!"

Get Back!

Hard disk on this executive's laptop has failed, and his most important e-mail folder may be gone. "But don't worry," he tells support pilot fish. "I had a backup plan. Whenever I got something really important, I'd e-mail a copy to myself and put it in a different folder." Fish groans, "Which was actually located on the same hard drive."



as he puts it, "What about a forklift upgrade?" "Let's not get

into that here," VP says. "We're only interested in providing the communications equipment!"

Mind Reader

Six weeks into this ill-conceived data warehouse project, everything is behind schedule, says the pilot fish who's the only one working on it. Finance department manager tells him, "You've been working on this for the last six weeks and have not met any of our deadlines. To get a better idea of the current situation, I ask you, what hasn't been completed that we assume you completed?"

Well, He Was

Job-hunting pilot fish wants to be on time for his interview, so on Saturday afternoon, he takes a drive to find the right building. He does — and to his surprise, there are two guys standing outside, so fish strikes up a conversation. "You have an interview?" one asks. "For what job?" IT director, fish says. "I bet Joe would like to know about that," he tells his companion, then explains to fish, "Joe's the director of IT now."

Picture This

New not-very-techie IT boss complains to help desk pilot fish that his new laptop's DVD player won't work with CDs. "It's not backwards-compatible," he says. As fish watches, manager puts in a CD, and music begins playing. So what's the problem? fish asks. "Yeah, there's sound," boss says, "but no picture!"

Heavy Equipment

This telco is getting into the data networking business, and the VP of IT insists on leading technical sales meetings, says a pilot fish who attended one. Things are running fine until one engineer suggests replacing all the customer's existing hardware with racks of new equipment — or



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